

EV-C500E

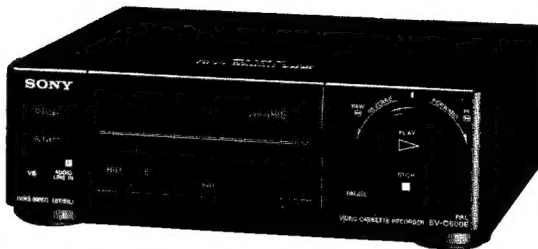
RMT-V124C

SERVICE MANUAL

AEP Model
UK Model



Remote commander
is available as a
unit, See page 95
for repair parts.



video Hi8

U' MECHANISM

For MECHANICAL ADJUSTMENT, refer to the "8mm
Video MECHANICAL ADJUSTMENT MANUAL III
(U MECHANISM)" (9-972-732-11).

SPECIFICATIONS

System

Video recording system	Rotary two-head helical scanning FM system
Audio recording	Rotary head, AFM system
Video signal	PAL colour, CCIR standards
Usable cassette	8 mm video format cassettes
Tape speed	SP: approx. 20.051mm/sec. LP: approx. 10.058mm/sec.
Maximum recording time	SP: 1 hour 30 minutes (with Sony E5/P5-90 cassette)
Fast-forward and rewind time	Approx. 4.5 minutes (with Sony E5/P5-90 cassette)

Inputs and outputs

Video input	LINE IN VIDEO (phono jack) (1) Input signal: 1 Vp-p, 75 ohms, unbalanced, sync negative
Video output	LINE OUT1/2 VIDEO (phono jack) (1) Output signal: 1 Vp-p, 75 ohms, unbalanced, sync negative EURO-AV (21-pin) (1) Output signal: pin 19 1 Vp-p, 75 ohms unbalanced, sync negative
S VIDEO input	LINE IN S VIDEO (4-pin, mini-DIN) (1) Luminance signal: 1 Vp-p, 75 ohms, unbalanced, sync negative Chrominance signal: 0.3 Vp-p, 75 ohm, unbalanced

S VIDEO output	LINE OUT1 S VIDEO (4-pin, mini-DIN) (1) Luminance signal: 1 Vp-p, 75 ohms, unbalanced, sync negative Chrominance signal: 0.3 Vp-p, 75 ohms, unbalanced EURO-AV (S) 21-pin (pins 15 and 19)
Audio input	LINE IN AUDIO (phono jack) (2) Input level: -7.5 dBs Input impedance: more than 47 kilohms
Audio output	LINE OUT1 AUDIO (phono jack) (2) LINE OUT2 AUDIO (phono jack) (1) Standard impedance: -7.5 dBs at load impedance 47 kilohms Output impedance: less than 10 kilohms EURO-AV (21 pin) (1) Standard impedance: -6 dBs at load impedance 1 kilohm Output impedance: less than 10 kilohms
CONTROL S IN	Mini jack
CONTROL L	Stereo mini-mini jack

—continued on next page—



Hi8 VIDEO CASSETTE RECORDER
SONY®

General

Power requirements	UK model: 240 V AC, 50Hz Models for other countries: 220 – 240 V AC, 50 Hz
Power consumption	13 W (max.)
Operating temperature	5°C to 40°C (41°F to 104°F)
Storage temperature	–20°C to 60°C (–4°F to +140°F)
Dimensions	Approx. 225 x 75 x 252 mm (w/h/d) Approx. 8 7/8 x 3 x 10 inch
Mass	Approx. 2.1 Kg (4 lb 10 oz)

Remote Commander RMT-V124C

Remote control system	Infrared control
Power requirements	3V DC (2 IEC designation R6 batteries)

Supplied accessories, see page 5.

Design and specifications subject to change without notice.

Note

This appliance conforms with EEC directive 87/308/EEC regarding interference suppression.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are “pinched” or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the line cord for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
6. Flexible Circuit Board Repairing
 - Keep the temperature of the soldering iron around 270°C during repairing.
 - Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
 - Be careful not to apply force on the conductor when soldering or unsoldering.

SAFETY-RELATED COMPONENT WARNING!!



COMPONENTS IDENTIFIED BY MARK  OR DOTTED LINE WITH MARK  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

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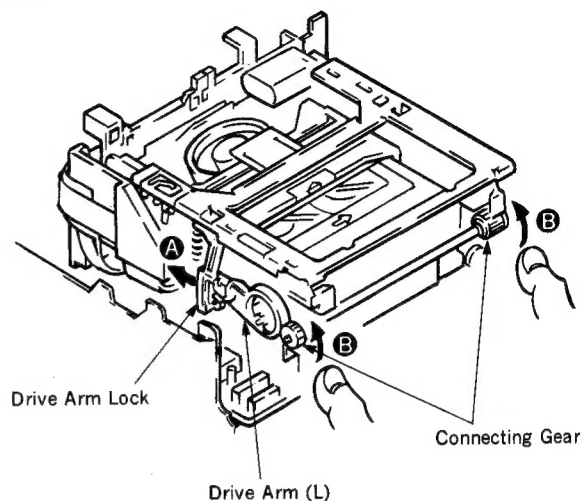
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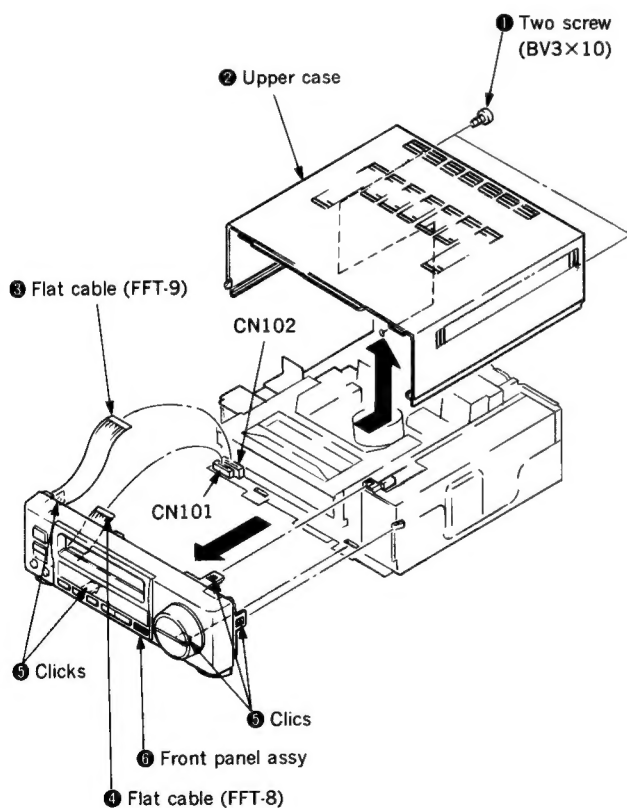
SECTION 1 SERVICE NOTE

1-1. REMOVAL OF CASSETTE AT FAILURE WITH CASSETTE INSERTED

- Ⓐ If tape is wound on the drum and it cannot be removed: Rotate the capstan motor wheel in either direction and rotate the S or R reel to house the tape. Then, perform Procedure Ⓑ.
- Ⓑ If tape is housed in the cassette half and cannot be removed:
 - ① Remove the MD block. (For removal, refer to Section 3-3.)
 - ② Release the drive arm lock from the drive arm (L) located between the L frame and the left side of the cassette controller in the arrow direction Ⓐ.
 - ③ Rotate the connecting gear in the arrow direction Ⓑ with both the thumbs.

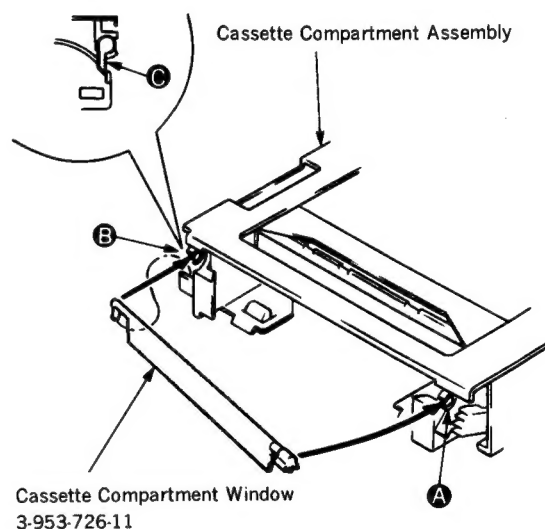


1-2. REPLACEMENT OF EXTERNAL PARTS



1-3. REPLACEMENT OF CASSETTE DOOR ASSEMBLY

- 1) Remove the front panel.
- 2) First undo Ⓐ portion toward you and then undo Ⓑ.



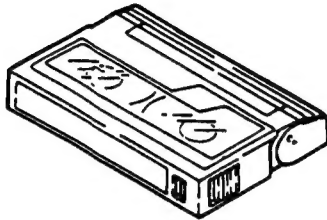
- 3) When installing, as shown above, first put in Ⓑ portion by setting the claw Ⓒ. Then, put in Ⓐ portion and install so that the door hangs almost vertically.

1-4. CLEANING OF VIDEO HEAD AND RUN SYSTEM

Method 1

[Cleaning Method with Cleaning Tape]

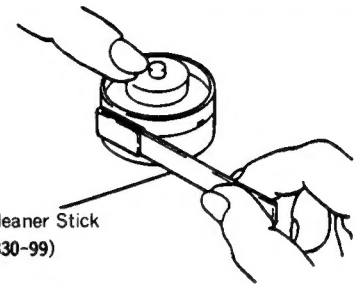
- A cleaning cassette should be used. (When using, the attached manual for the cleaning cassette should be thoroughly read.)



Method 2

[Cleaning Method with Cleaning Liquid]

- ① Remove the upper case of the video deck.
- ② Apply cleaning liquid to a head cleaner stick.
- ③ As shown in the right figure, press the head cleaner stick lightly. Turn the rubber of the rotary upper drum gradually and clean the video deck.



Head Cleaner Stick
(3-601-330-99)

[Cleaning Method for Run System]

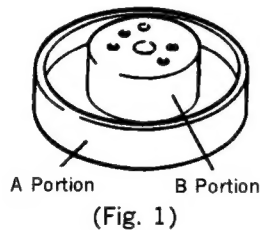
- ① Apply cleaning liquid to a head cleaner stick.
- ② Clean the guides which tape touches directly and the pinch roller with the head cleaner.

1-5. REPLACEMENT OF UPPER ROTARY DRUM

Method 3

Caution

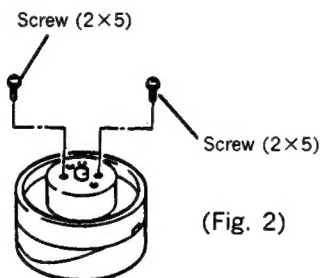
- Particular care must be taken when handling the video head and the terminals
- When handling the rotary upper drum, do not touch the side (A portion) and hold the top (B portion) (See Fig. 1)



(Fig. 1)

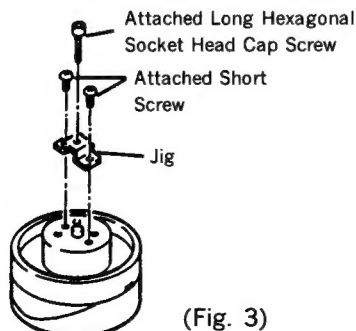
Removal of Rotary Upper Drum

- ① Remove two screws (2×5) (See Fig. 2).



(Fig. 2)

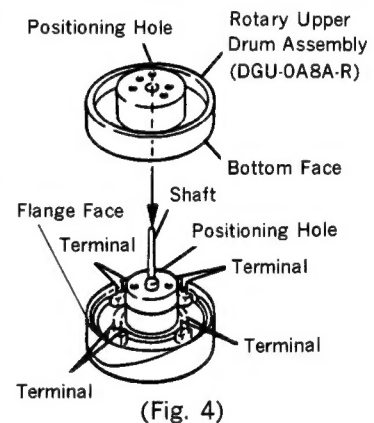
- ② Fix the jig (supplied with the spare rotary upper drum) with the two attached short screws. Then, put the attached long screw into the jig until the rotary upper drum may be removed (See Fig. 3).



(Fig. 3)

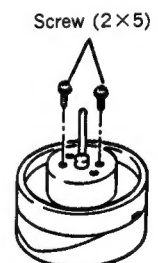
Installation of New Rotary Upper drum

- ① Clean the flange face and the bottom face of the new rotary upper drum (See Fig. 4).
- ② Insert the shaft attached to the jig into the positioning hole in the lower drum. Then, put the shaft through the positioning hole in the new rotary upper drum and set the drum lightly.



(Fig. 4)

- ③ With the shaft inserted into the positioning hole, push into the upper drum lightly with a hand. If the drum is not allowed to be bottomed, alternately tighten two screws (2×5) gradually and install the drum (See Fig. 5)
- ④ Pull out the shaft inserted. If the shaft is not allowed to be withdrawn smoothly, go back to Step ② and redo the procedure.



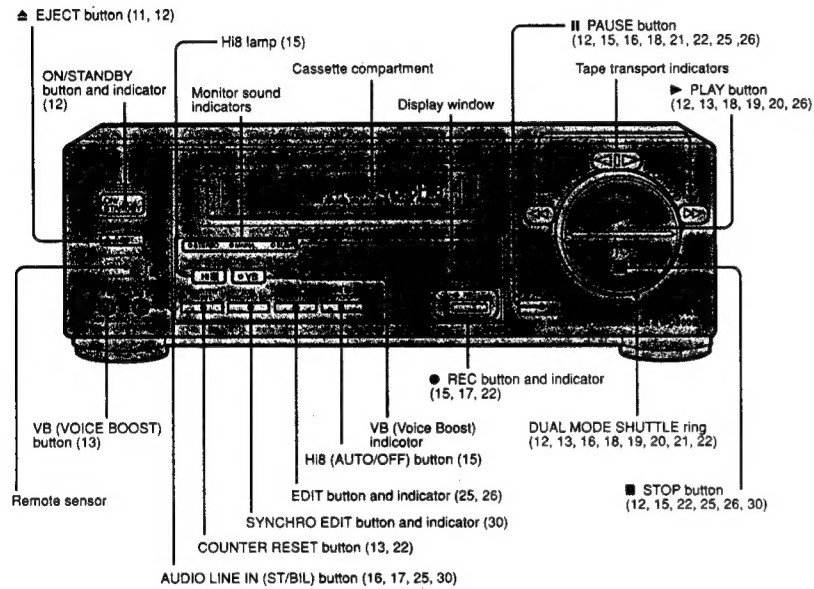
(Fig. 5)

- ⑤ Once the drum has been replaced, clean the video head and the run system with a head cleaner stick (See "Cleaning Method 2 for Video Head and Run System").

Identifying the Parts and Controls

Front Panel

The function of each control is explained on the page indicated in parentheses ().

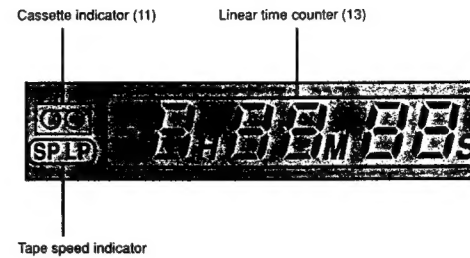


Tape transport Indicators

No indicator lit	Recording	II	Recording pause
◀	Playback, double speed playback (reverse), Slow motion playback (reverse)	▶	Playback, double speed playback (forward), Slow motion playback (forward)
◀ II	Play pause (reverse)	II ▶	Play pause (forward)
◀◀	Rewind	▶▶	Fast forward
◀◀ ▶	Picture search, locked picture search (reverse)	▶▶ ▶	Picture search, locked picture search (forward)
◀ ✨	Frame-by-frame picture (reverse)	✨ ▶	Frame-by-frame picture (forward)
◀◀ ✨	Auto play		

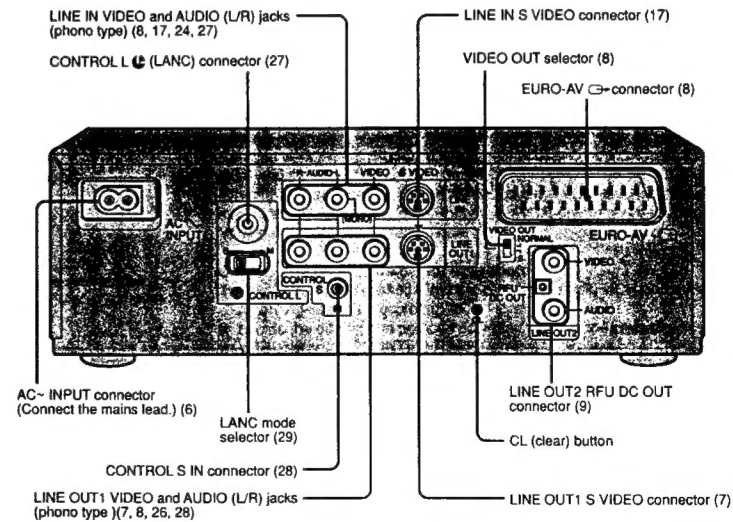
Display Window

Each indicator is explained on the page indicated in parentheses ().



Rear Panel

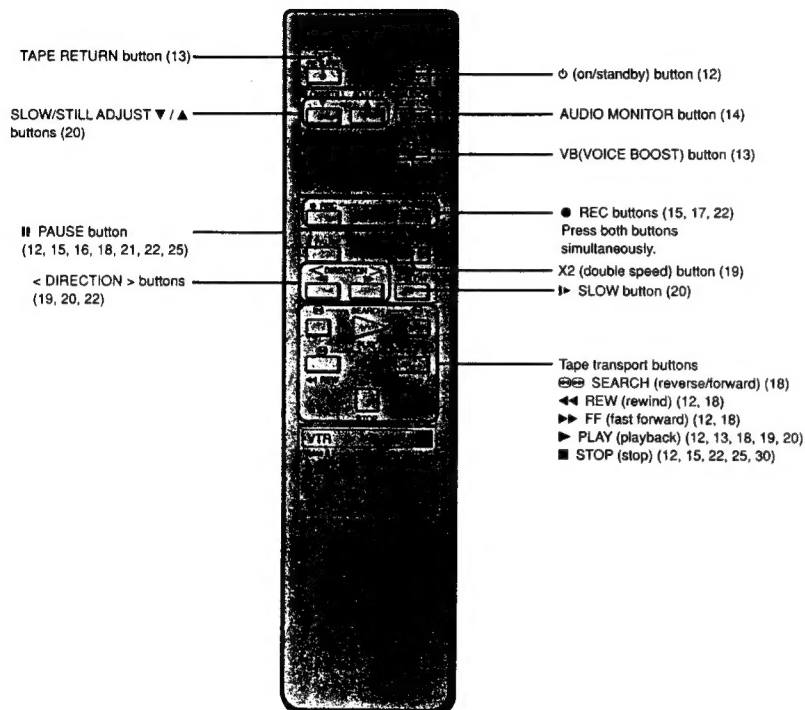
The function of each control is explained on the page indicated in parentheses ().



This section is extracted from instruction manual.

Remote Commander

The function of each control is explained on the page indicated in parentheses ().



Features

High quality picture and sound

- **Hi8 video system**
The Hi8 video format features 400 lines of horizontal resolution, giving you a high video quality.
- **AFM Hi-Fi stereo system**
You can record Hi-Fi sound with a live stereo sound atmosphere.

Editing

- **DUAL MODE SHUTTLE ring**
Allows quick access to the desired scene and playback at various speeds in both forward and reverse directions.
- **CONTROL L Ⓢ (LANC) connector**
Allows easy connection to another piece of equipment such as a video camera recorder (camcorder). This lets you control tape transport of both devices from one set of controls. With this simultaneous control you can use bi-directional synchronized editing.
- **CONTROL S IN connector**
Allows remote control of this VCR by other Sony video equipment with a CONTROL S OUT connector.
- **S VIDEO IN/OUT connector**
Allows clear picture by separating colour signal from luminance signal.

Function

- **Voice boost function**
When playing back a tape recorded with a video camera recorder (camcorder), voice boost enhances the voice portion of the sound and reduces "unwanted" background noise like wind so that it is easier to listen to conversation.

How to Use This Manual

This manual is divided into the following six chapters: **Chapter 1** Introduction, **Chapter 2** Preparation, **Chapter 3** Basic Operations, **Chapter 4** Advanced Operations, **Chapter 5** Editing and **Chapter 6** Additional Information. If you are already familiar with the basic operations, skip **Chapter 3** Basic Operations and see **Chapter 4** Advanced Operations. If you have any problems with installing or operating the EV-C500E, refer to the troubleshooting section first before calling your local Sony dealer.

When you are reading through the manual, remember:

- Buttons and switches on the VCR to be used in operating the VCR are called out and shown in uppercase letters in the illustrations.
- Buttons and switches on the Remote Commander to be used for operating the VCR are called out and enlarged in the illustrations.

Conventions



This indicates a function operated only with the buttons on the VCR itself, but not with those on the Remote Commander.



This indicates a function operated only with the buttons on the Remote Commander, but not with those on the VCR itself.

Unpacking

Unpack all the items and check to confirm that you have everything listed below.

- Remote Commander RMT-V124C (1)
- R6 (size AA) batteries (2)
- AV (audio/video) cable (3 phono to 3 phono) (1)
- Mains lead (1)

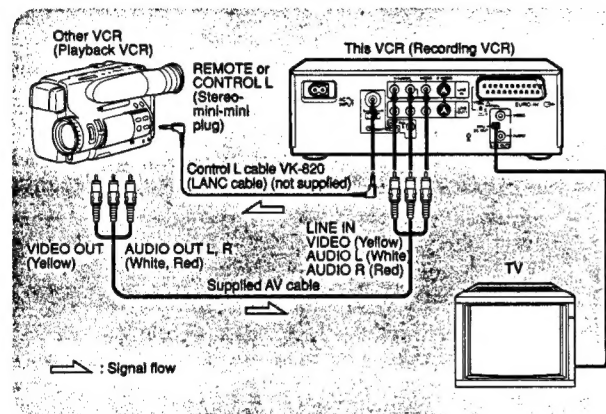
Synchronized Editing

If your other VCR has a control L or control S connector, you can take advantage of a feature called "Synchronized Editing" that controls both VCRs (recording VCR and playback VCR), and releases the pause when SYNCHRO EDIT is pressed. To use this function, you must connect a designated control cable (Control L or S cable) in addition to the connections of the audio and video cables.

There are two types of control cables: control L (REMOTE) cable and control S cable according to the type of connectors of the VCRs.

After you have made the connections on this and following pages, you must set the LANC mode. For details, see page 29.

Connecting Video Equipment with the LANC Connector



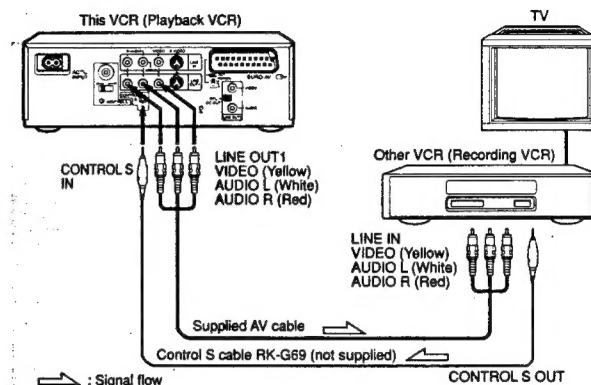
Notes

- When connecting two VCRs, do not connect them so that both VCRs are used as a recording VCR and a playback VCR simultaneously. Doing so may cause a humming noise.
- If your playback VCR is equipped with the S VIDEO output connector, you can use the S VIDEO cable (not supplied) to connect to the LINE IN S VIDEO connector on this VCR. This connection gives you a higher quality picture than using the video cable.
- When you use the LINE IN VIDEO jack and the LINE IN S VIDEO connector at the same time, the LINE IN S VIDEO connector has priority.
- If your playback VCR is a monaural unit, connect the white plug to LINE IN AUDIO L on this VCR and leave the red plug unplugged. This lets you record the sound of the playback VCR on both channels of this VCR. Do not connect the white plug to LINE IN AUDIO R.
- If your playback VCR is a EURO 21-pin type, use the VMC-216 cable (not supplied).
- If another VCR has both the LANC connector and the CONTROL S connector, use the LANC connector. Do not make the LANC and CONTROL S connections simultaneously.

About the LANC

LANC stands for Local Application Control System. The LANC connector is used for controlling the tape transport of video equipment and peripherals connected to it. This connector has the same function as the connectors indicated as CONTROL L or REMOTE.

Connecting Video Equipment with the CONTROL S Connector



When using the Control S cable

The synchronized editing using the CONTROL S connector is the same as the synchronized editing using the LANC connector. This enables you to pause both VCRs and release pause mode of both VCRs.

You can only perform synchronized editing using the CONTROL S IN connector when the other VCR has the CONTROL S OUT connector.

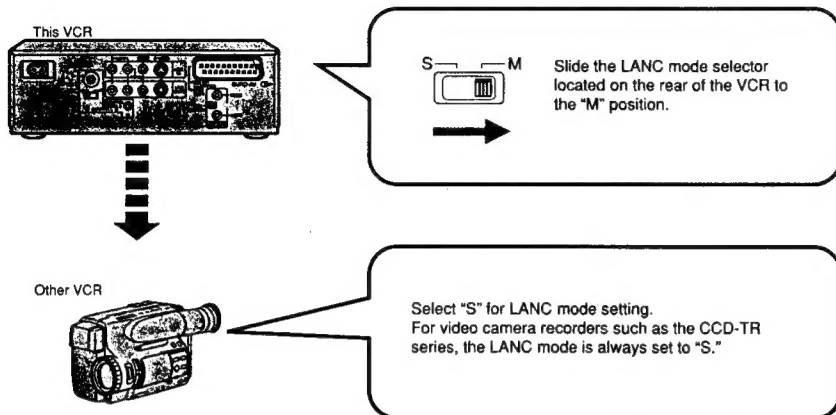
If the other video equipment has the synchronized function, use the SYNCHRO EDIT button on the other equipment.

Set the command mode of this VCR and the other video equipment to the same position.

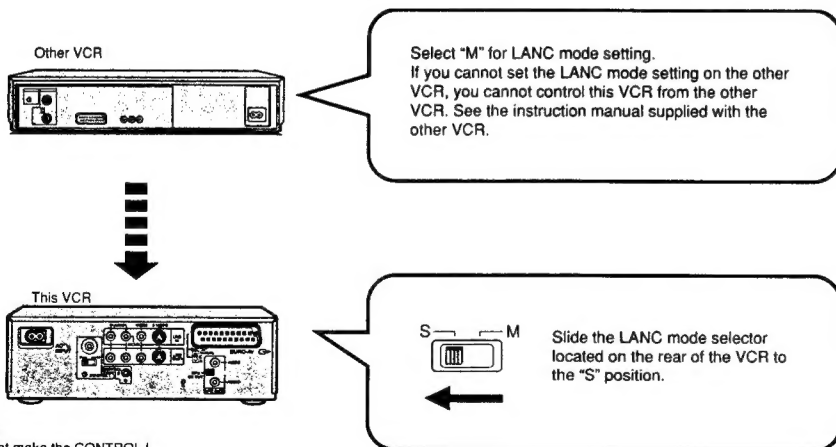
LANC Mode Setting

When you perform synchronized editing, remember to set the LANC mode as described below:

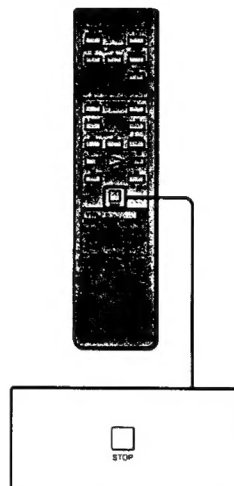
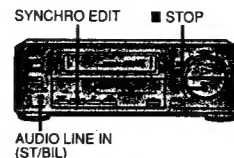
When you want to control the other VCR from this VCR



When you want to control this VCR from the other VCR



Note
Do not make the CONTROL L connection between this VCR and the other VCR with the LANC mode settings of both VCRs set to the same position.



Synchronized Assemble Editing

Before You Begin

- Press AUDIO LINE IN (ST/BIL) to select the sound to be recorded if you record a stereo or bilingual tape.
- Check the LANC mode setting (see page 29).

Operation

- 1 Insert a recorded cassette into the other (playback) VCR and a cassette for recording into this (recording) VCR.
- 2 Locate the recording starting point on this VCR and put the VCR in recording pause mode.
- 3 Locate the beginning of the scene to be edited out on the other VCR and put the VCR in playback pause mode.
- 4 Press SYNCHRO EDIT on this VCR. The SYNCHRO EDIT indicator lights up. Pause mode of both the recording VCR and the playback VCR is released to start editing.
- 5 Press SYNCHRO EDIT on this VCR at the point where you want to stop recording. This VCR enters recording pause mode, and the other VCR enters playback pause mode.
- 6 If you have another scene you want to edit, repeat steps 3 to 5.
- 7 After editing has been completed, press ■ STOP on both VCRs.

To make use of the linear time counter "0H00M00S" (zero) for synchronized editing

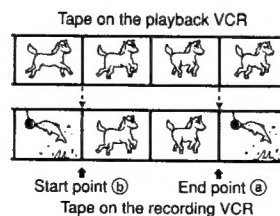
You can perform synchronized insert editing when this VCR is used as the recording VCR and the LANC mode is set to "M." When the linear time counter on this (recording) VCR reaches zero during synchronized editing, the other (playback) VCR enters playback pause mode and this VCR enters recording pause mode.

See the instructions below for operation.

- 1 Insert a recorded cassette into the other (playback) VCR and a cassette for recording into this (recording) VCR.
- 2 Locate the editing end point (Ⓔ) by playing back the cassette on this (recording) VCR and press COUNTER RESET on this VCR. The counter resets to "0H00M00S."
- 3 Rewind the tape on this VCR and put the VCR in recording pause mode at the editing start point (Ⓕ).
- 4 Press SYNCHRO EDIT on this VCR to start editing.

When the linear time counter reaches zero, the other VCR enters playback pause mode and this VCR enters recording pause mode.

- During synchronized editing**
- The EDIT function is activated automatically.
 - If the linear time counter reaches zero, synchronized editing stops.
 - The COUNTER RESET button does not function.



Technical Information

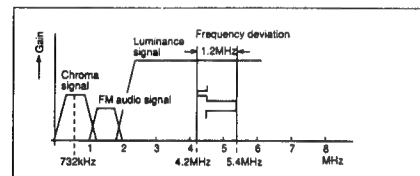
Hi8 (High Eight) Video System

The 8 mm video system employs a metal power tape. This means the video recorder is capable of recording a large amount of information (enhances picture quality). The Hi8 video system was developed utilizing the advantages of the 8 mm video system. (See the diagrams below.) The main characteristics of the Hi8 video system are as follows:

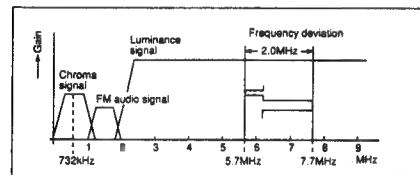
Characteristics of Hi8 System

- **Super high quality picture**
The information capacity, a key element for picture improvement, is increased by shifting up the FM carrier frequency range. In the Hi8 video system, the FM carrier frequency range of the luminance signal has been shifted up to 5.7 – 7.7 MHz. This is higher than the 4.2 – 5.4 MHz range of the standard 8 mm video system. Consequently, the horizontal resolution is improved to 400 lines.

Frequency allocation of the standard 8 mm video system



Frequency allocation of the Hi8 video system



- **Use of high grade tape to match the Hi8 video system**
Metal tape for the Hi8 video system is ideal because it has greater magnetism which permits high-density recording. The Hi8 VCR uses such high-grade tapes for the Hi8 video system, covering a wide frequency range, to achieve a high-quality video signal for recording/playback.

S VIDEO (separate luminance/chroma signal) input/output connectors

Conventionally, the video signal exchanged between the TV set and video equipment or among several video devices is called a composite video signal, in which the luminance (Y) and chroma (C) signals are mixed. In this system the composite video signal is liable to produce interference, resulting in a reduction of picture quality. To avoid this quality reduction, an S VIDEO connector is used to transmit and receive the video signal separated into the luminance signal and the chroma signal. With the separated video signal, flicker and colour blur in the picture are minimized and sharpness is enhanced to such an extent that hair and fine stripes are clearly visible. The S VIDEO connector also assures excellent editing quality with a minimum loss of picture quality.

Tape speed

The Hi8 video system uses the same tape speed as the standard 8 mm video system. An E5-120 tape allows four hours of playback in LP mode.

Recording and Playback in the Hi8 Video System

To take advantage of the EV-C500E Hi8 video system, you must use Hi8 video tapes for recording and playback.

You can use the EV-C500E to record and playback standard 8 mm video tapes if Hi8 quality is not necessary. (The Video 8 and standard 8 mm systems are often referred to as "normal" mode.)

The EV-C500E automatically detects the type of video system (standard or Hi8) in which the tape was recorded and plays the tape back accordingly.

To make the most of the Hi8 video system, set the Hi8 setting with the Hi8 (AUTO/OFF) button to "AUTO." In this way, EV-C500E records in the Hi8 video system. (See page 15.)

Compatibility with conventional video recorder decks

Tapes recorded using the Hi8 video system cannot be played back on conventional 8 mm video equipment (standard 8 mm video system).

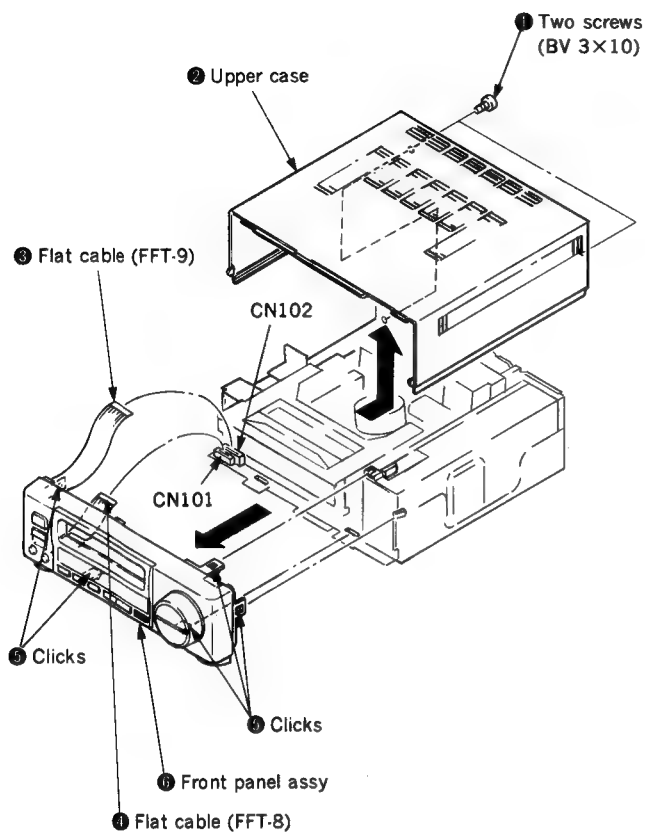
Troubleshooting

If you have a problem with your VCR, first check the mains lead connection, then go through the following list. Should the difficulty persist, unplug the unit and contact your Sony dealer or local authorized Sony Service Centre facility.

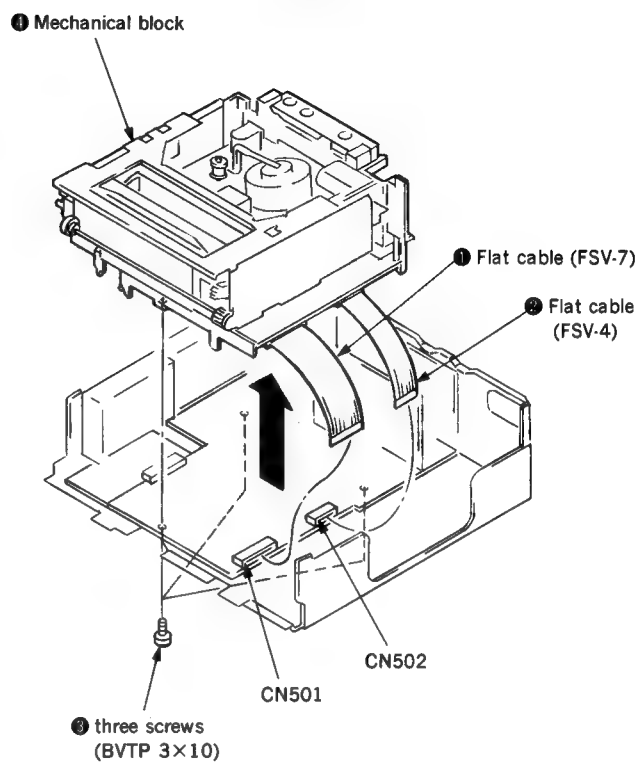
	Symptom	Possible causes and remedies
Power	The ON/STANDBY button does not work.	<ul style="list-style-type: none"> • The mains lead is disconnected.
Playback	The VCR does not play.	<ul style="list-style-type: none"> • The tape is at its end.
	No picture on the TV screen	<ul style="list-style-type: none"> • The correct programme position for the VCR has not been selected on the RFU adaptor, or video input has not been selected on the monitor. • Make sure that S VIDEO connection is tight. • Clean the video head. (See page 36.)
	The playback picture is not clear.	<ul style="list-style-type: none"> • The correct programme position for the VCR has not been selected on the RFU adaptor. • The video heads are dirty. Clean the heads using the Sony V8-25CLH video head cleaning cassette. For details on cleaning, refer to the instructions furnished with the cleaning cassette. If a cleaning cassette is not available in your area, have the heads cleaned at your nearest Sony Service Centre facility. (Do not use a commercially available wet-typed cleaning cassette. It may damage the video heads.) • The video heads are worn out.
	Noisy picture	<ul style="list-style-type: none"> • Place the VCR away from a TV. • Tape is defective. Use a new cassette.
	The picture moves vertically during picture search mode.	<ul style="list-style-type: none"> • Adjust the vertical hold control on the TV or colour monitor.
	The sound drops out.	<ul style="list-style-type: none"> • The cassette is defective. Use a new video cassette.
Recording	A cassette is ejected when ● REC is pressed.	<ul style="list-style-type: none"> • Check the safety tab.
	The VCR does not record.	<ul style="list-style-type: none"> • Remove the S VIDEO cable from the LINE IN S VIDEO connector when the cable is not used. • No cassette has been inserted. • The cassette is at its end.
Others	A cassette cannot be inserted.	<ul style="list-style-type: none"> • A cassette has already been inserted.
	The Remote Commander cannot be operated.	<ul style="list-style-type: none"> • The batteries are low.
	The VCR does not respond when you press any button.	<ul style="list-style-type: none"> • The built-in microprocessor may be defective. Pressing the CL (clear) button on the rear panel, with a pointed object such as a ball-point pen, may fix the problem.
	When you perform synchronized editing, you cannot control this VCR from the other VCR.	<ul style="list-style-type: none"> • The LANC mode of the other VCR is set to "S" (See page 29). • The LANC mode of this VCR is set to "M" (See page 29).

SECTION 3 DISASSEMBLY

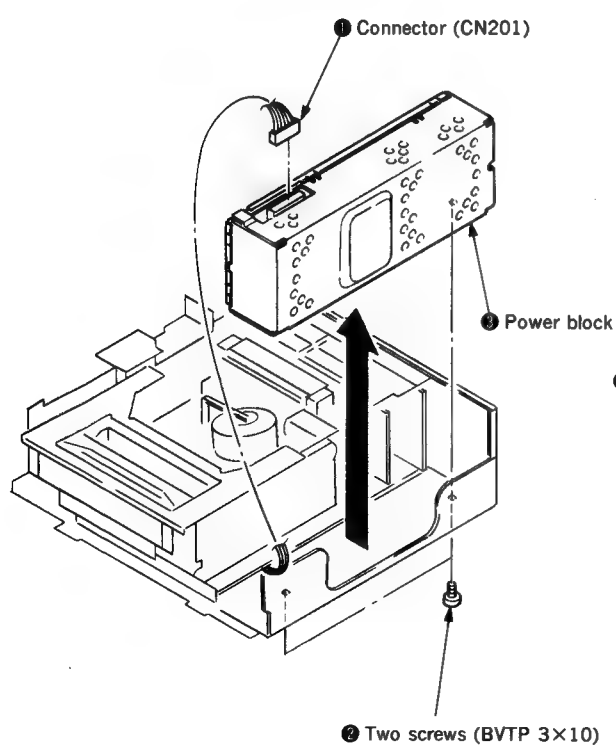
3-1. REMOVAL OF FRONT PANEL AND UPPER CASE



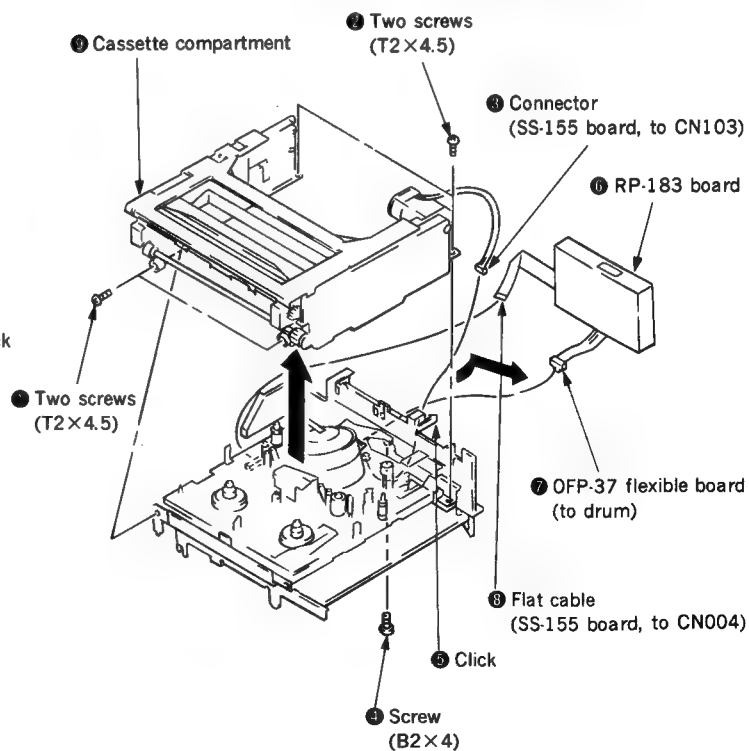
3-3. REMOVAL OF MECHANICAL BLOCK



3-2. REMOVAL OF POWER BLOCK

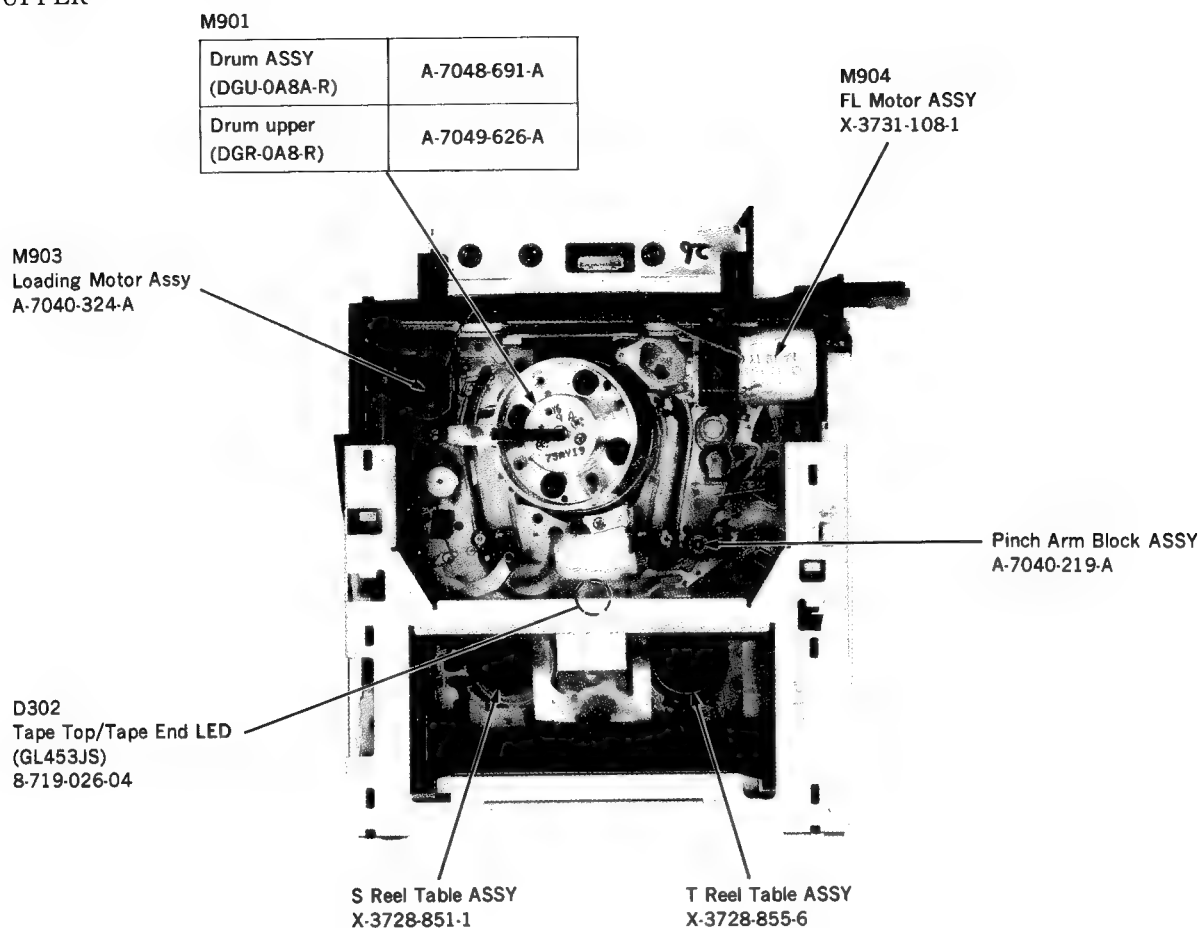


3-4. REMOVAL OF CASSETTE COMPARTMENT

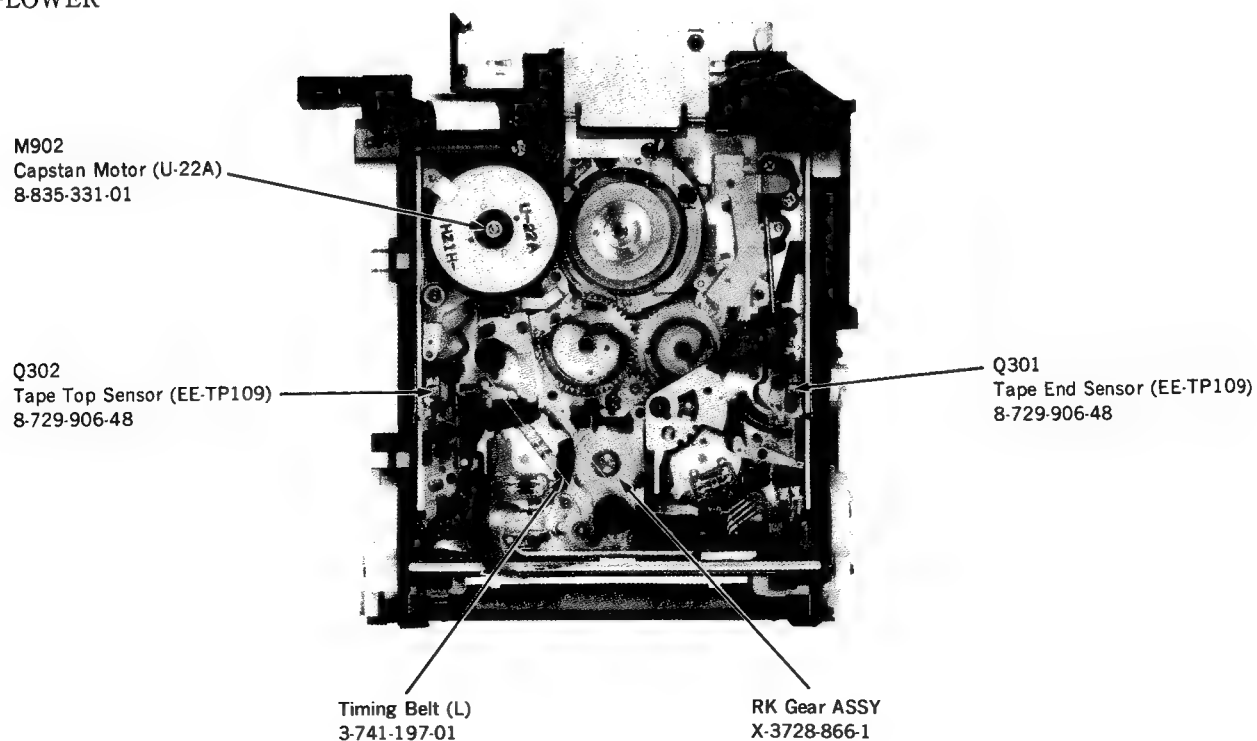


3-5. MECHANICAL INTERNAL VIEWS

—UPPER—



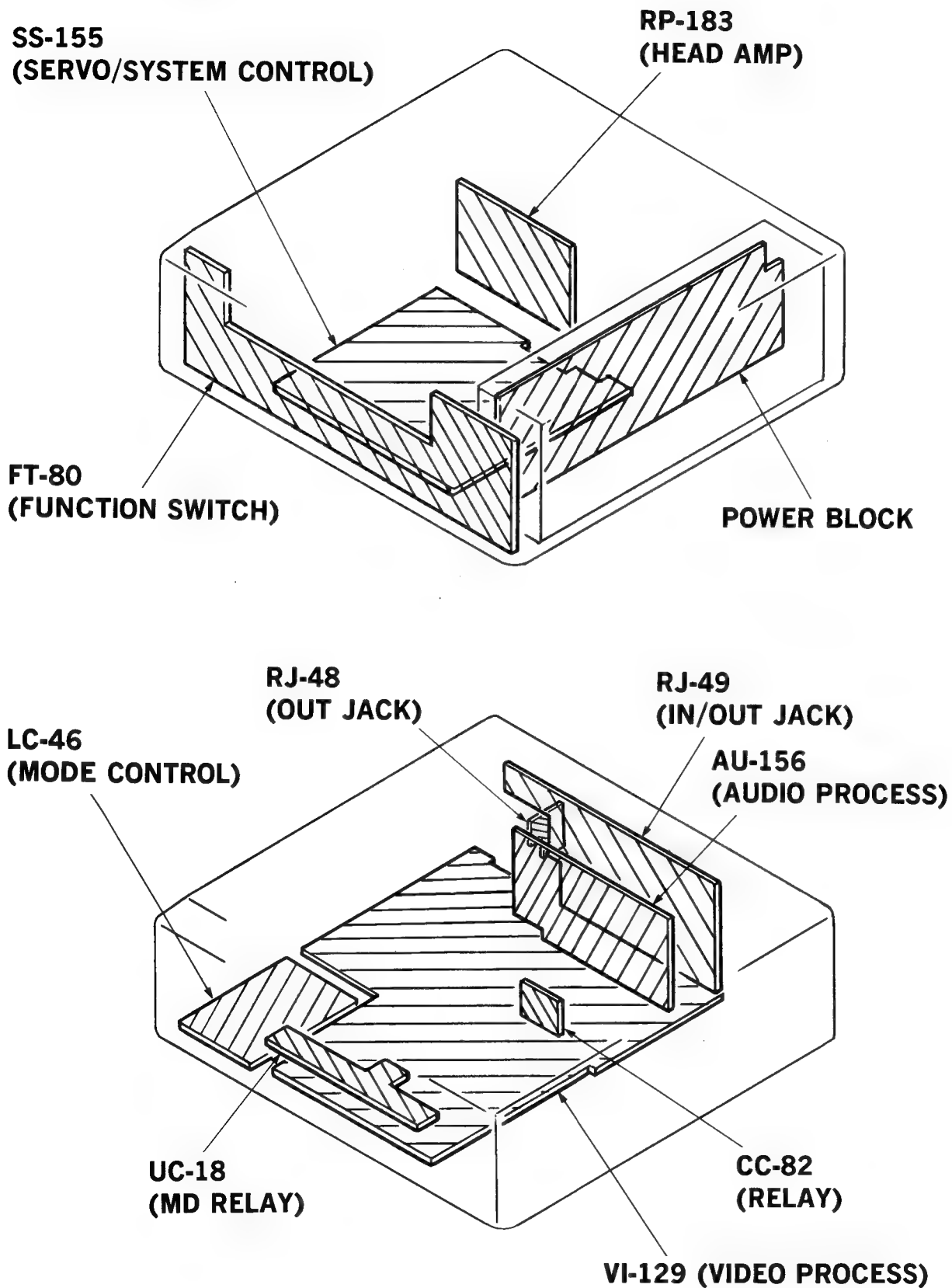
—LOWER—



EV-C500E

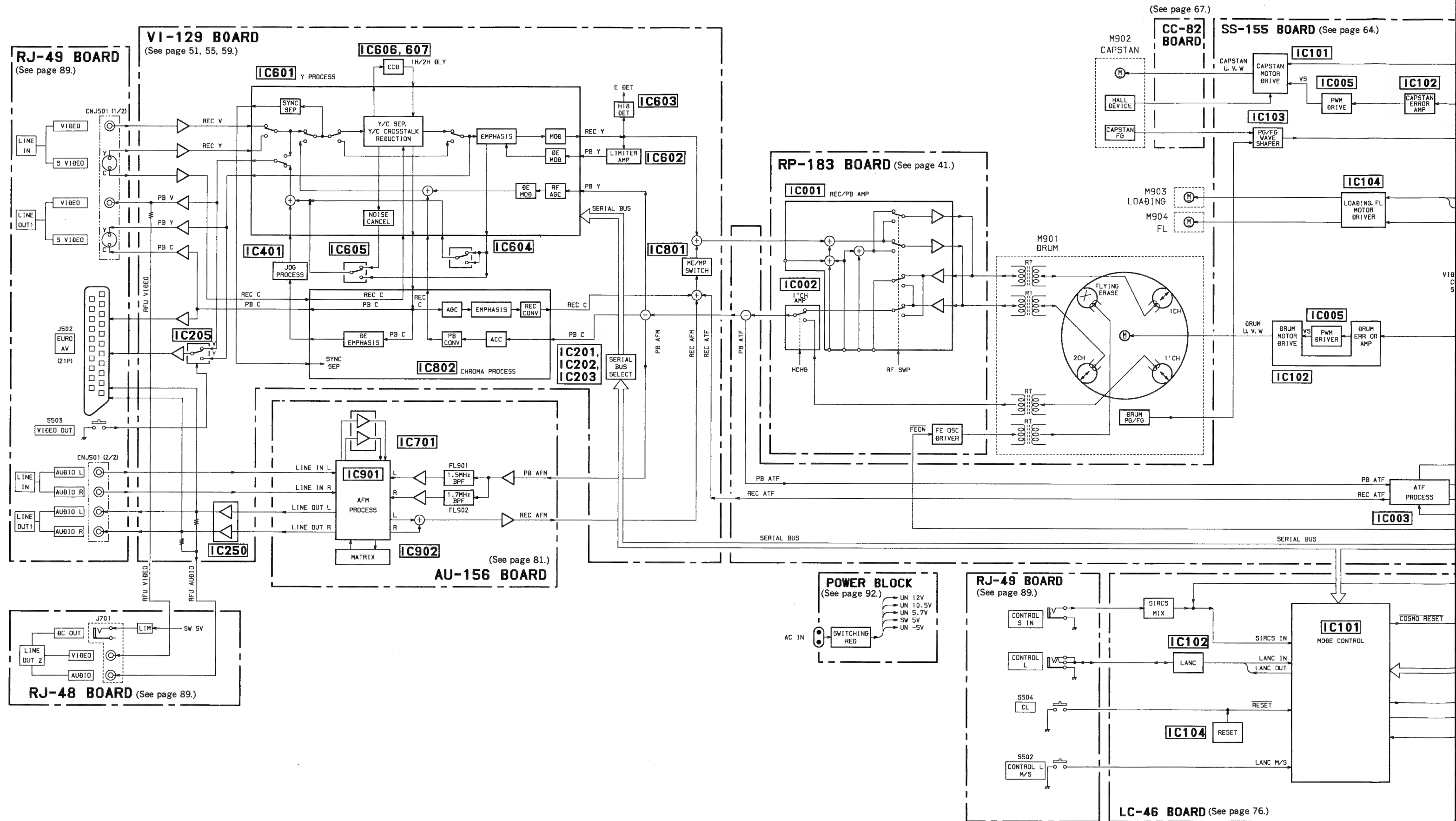
SECTION 4 DIAGRAMS

4-1. CIRCUIT BOARDS LOCATION



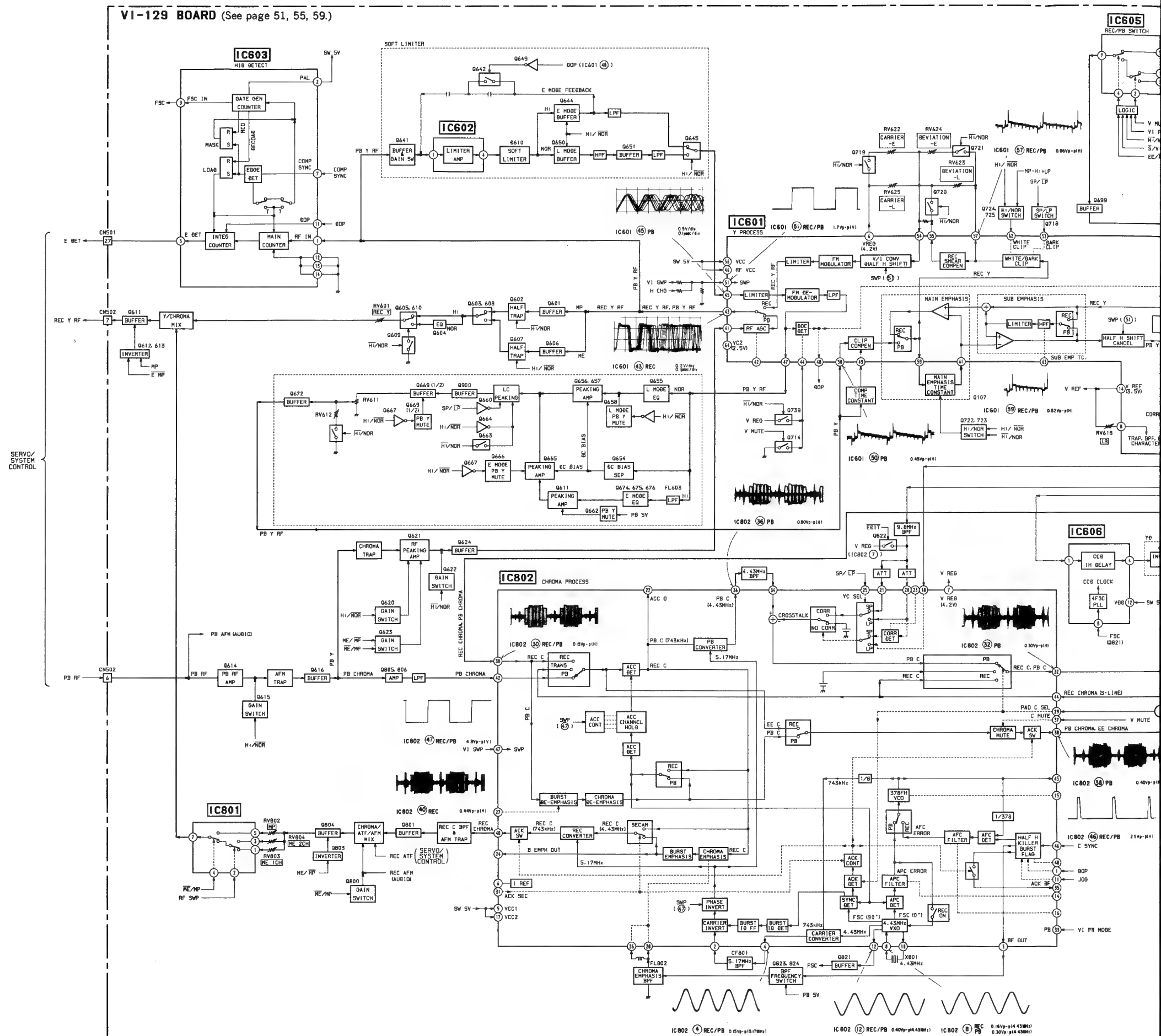
4-2. OVERALL BLOCK DIAGRAM

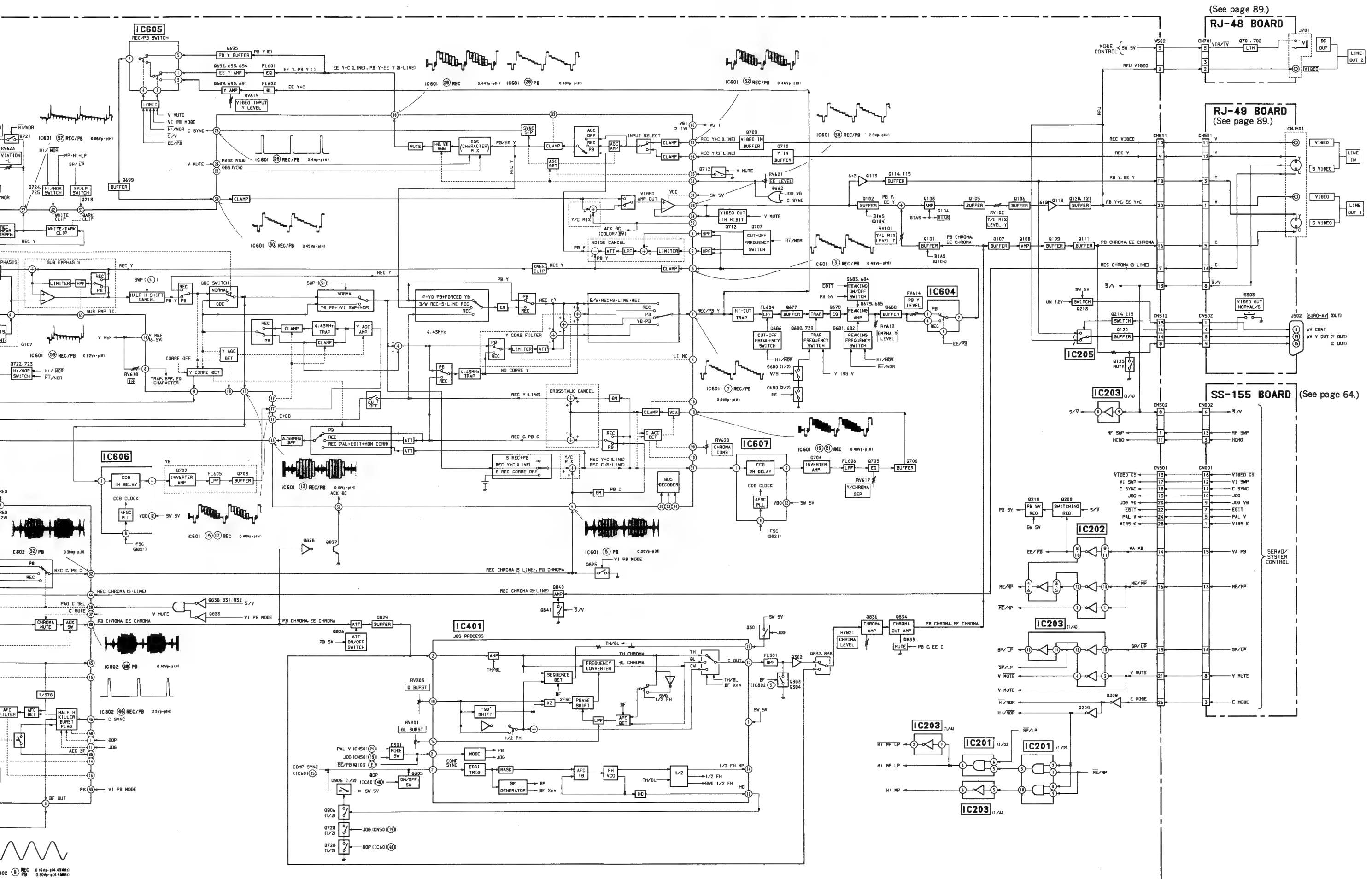
• The boards which signals only pass through may be omitted.



4-4. VIDEO BLOCK DIAGRAM

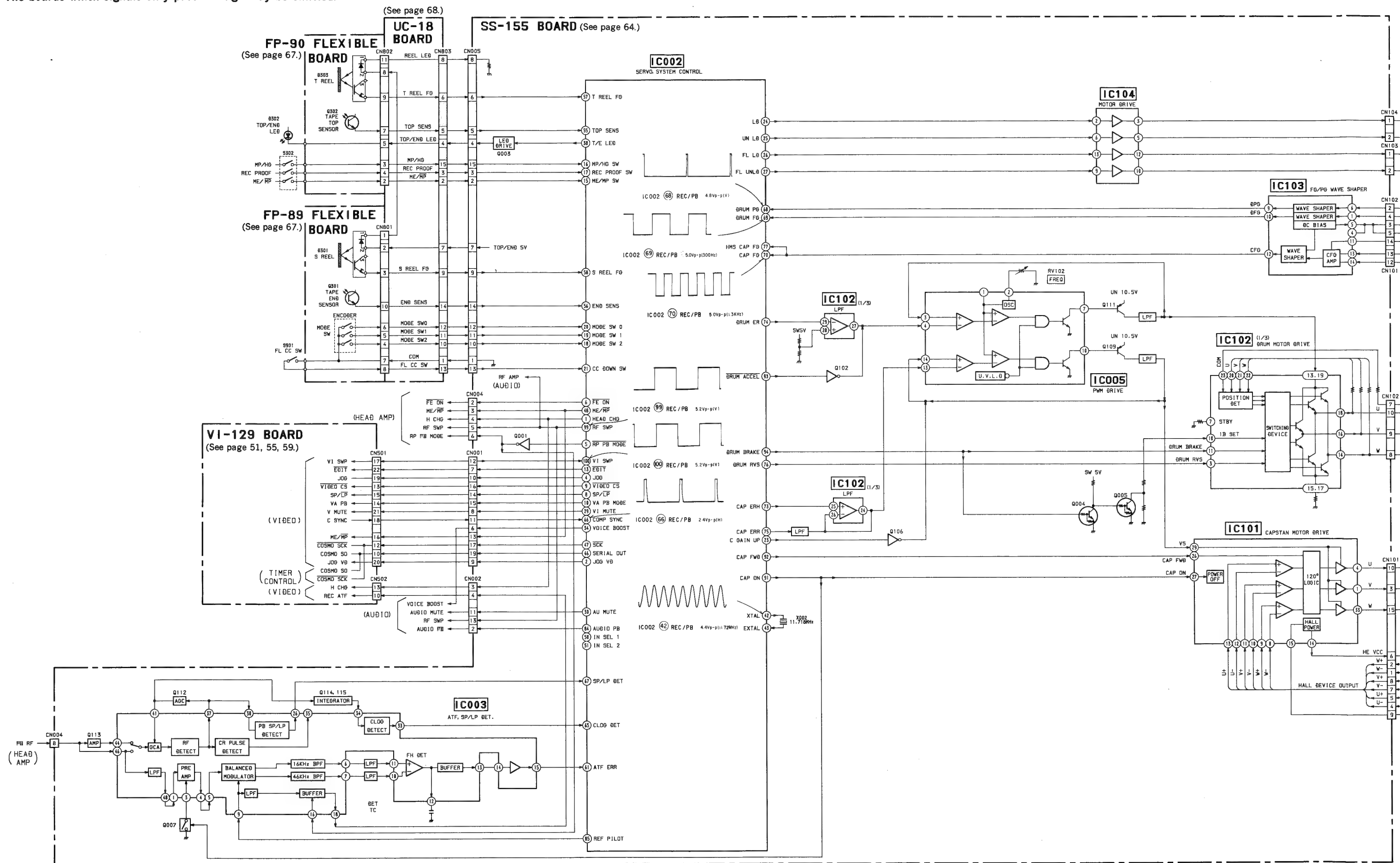
- The boards which signals only pass through may be omitted.



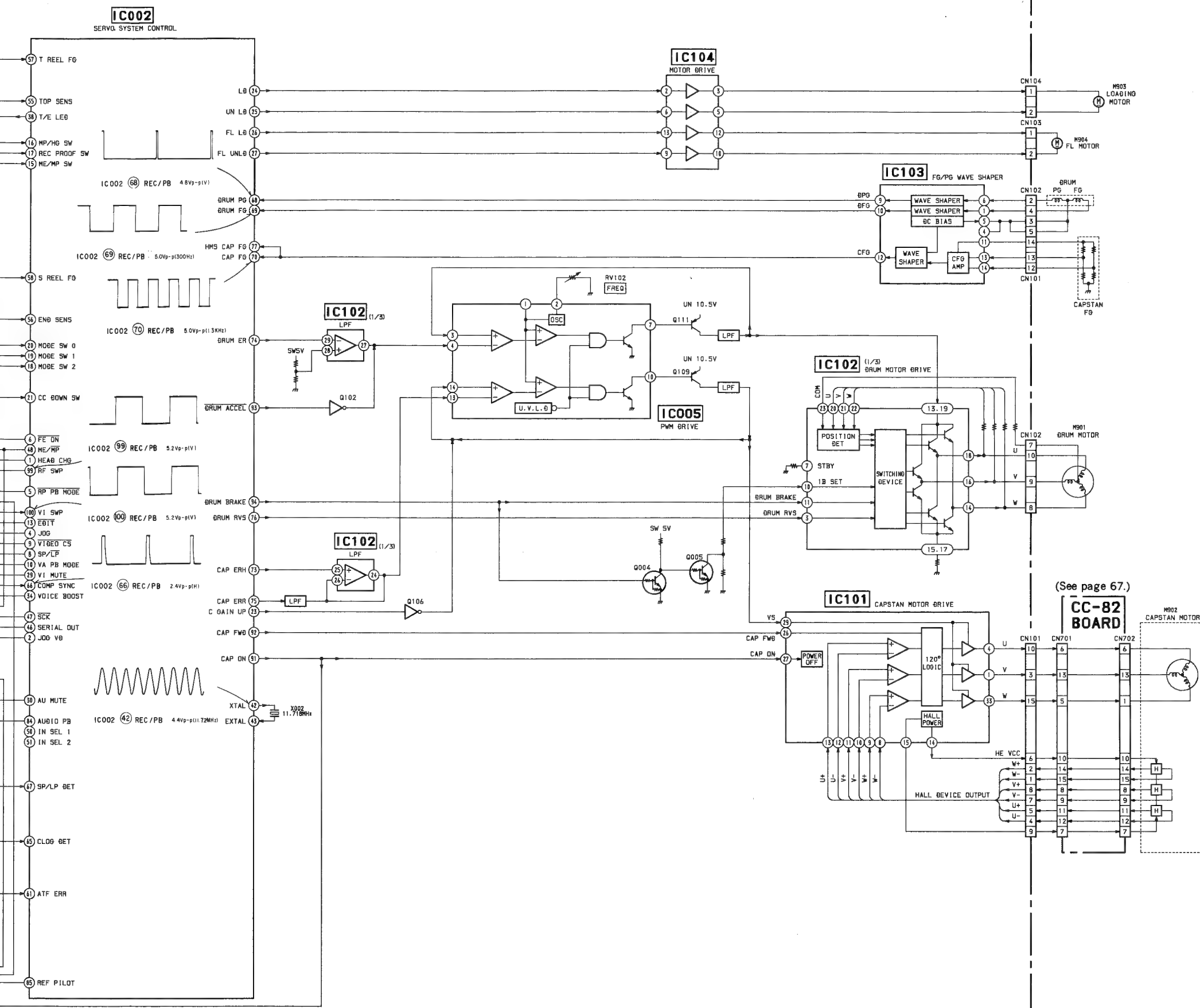


4-5. SERVO, SYSTEM CONTROL BLOCK DIAGRAM

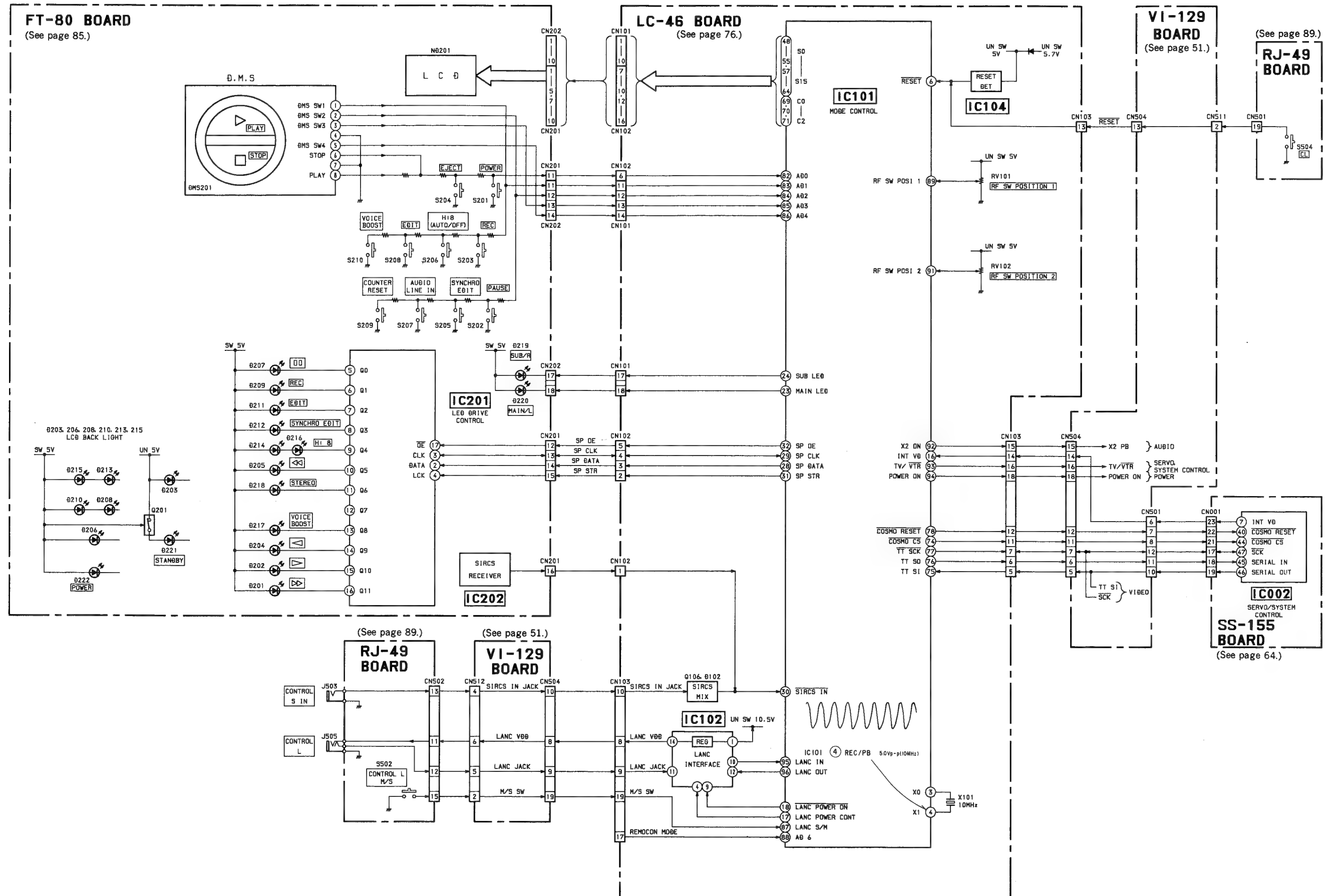
• The boards which signals only pass through may be omitted.



RD (See page 64.)

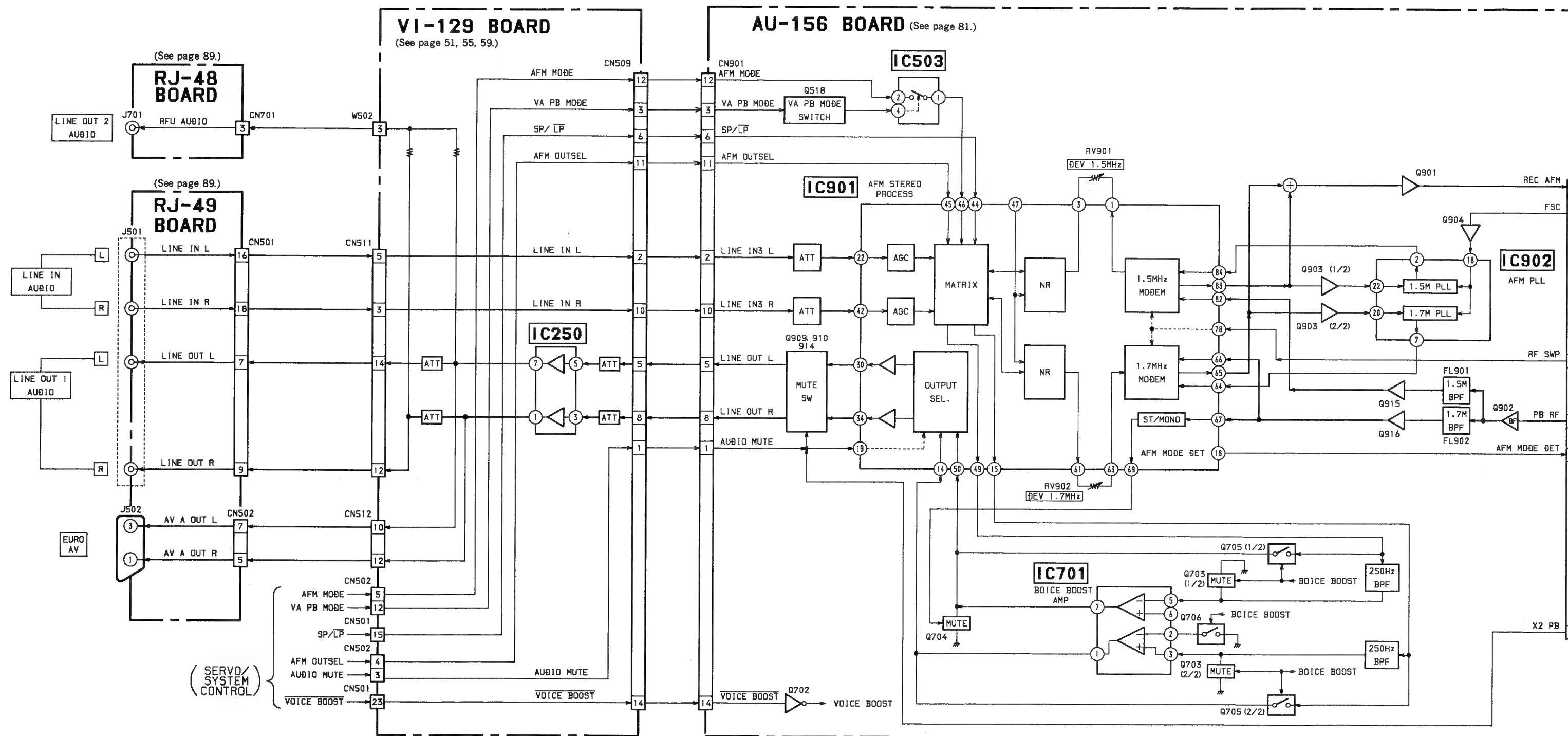


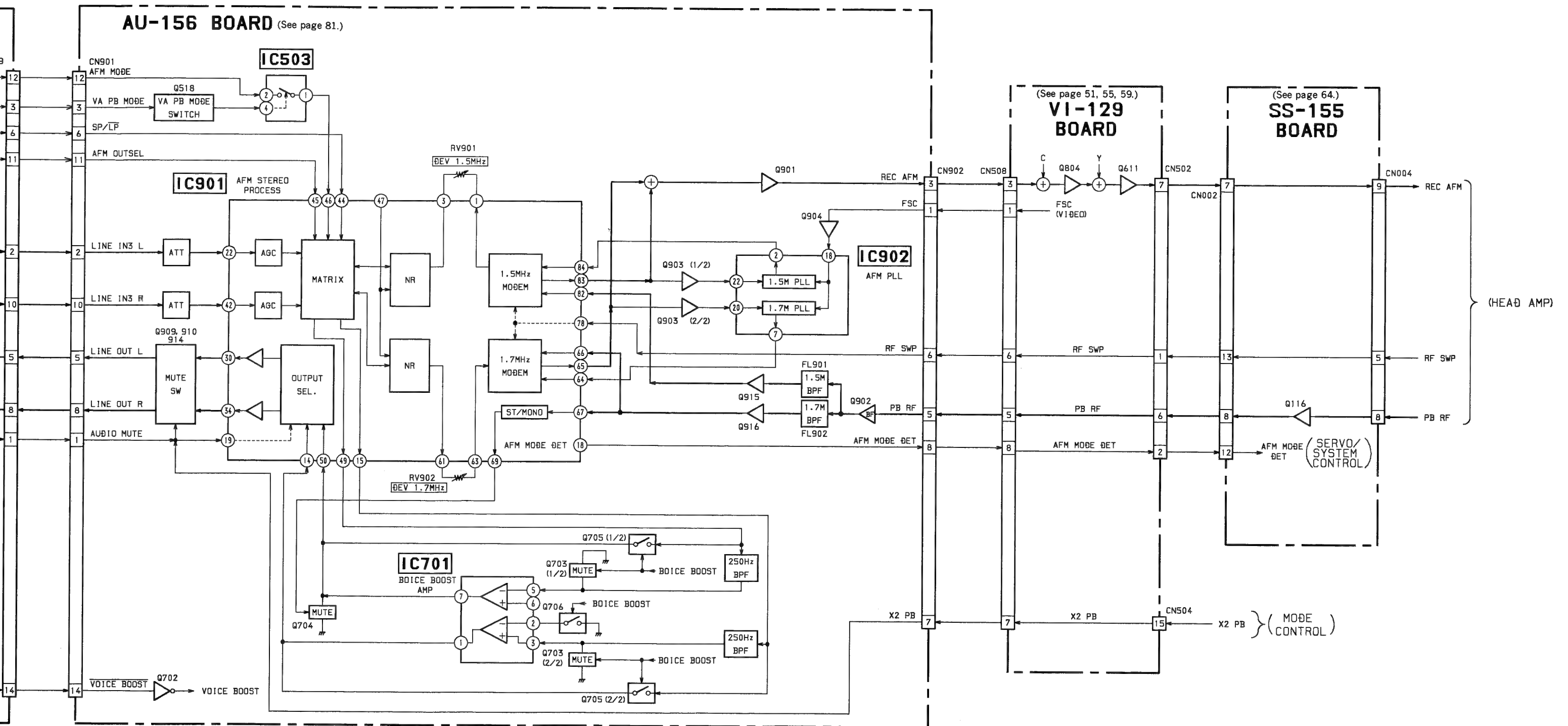
- The boards which signals only pass through may be omitted.



4-7. AUDIO BLOCK DIAGRAM

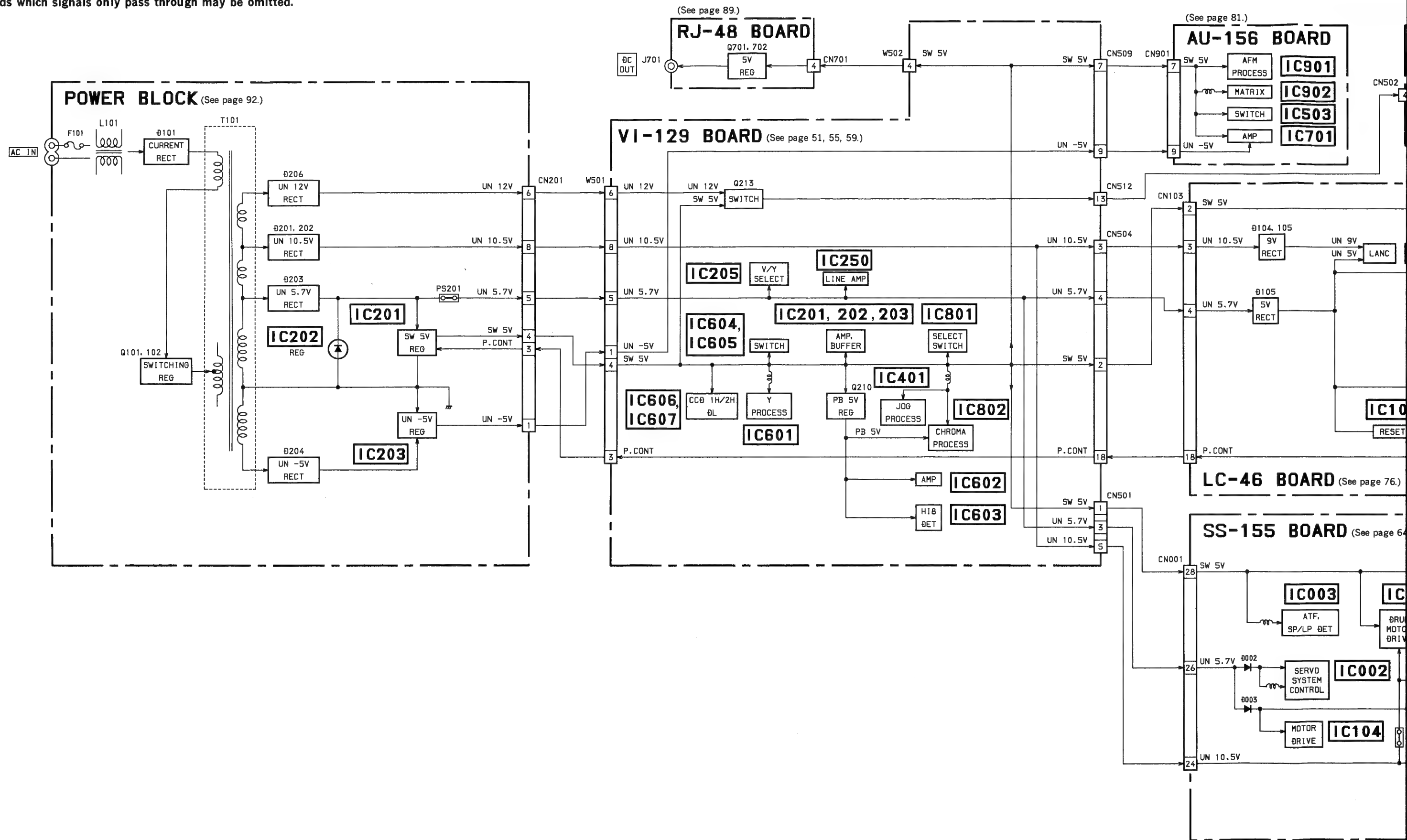
• The boards which signals only pass through may be omitted.

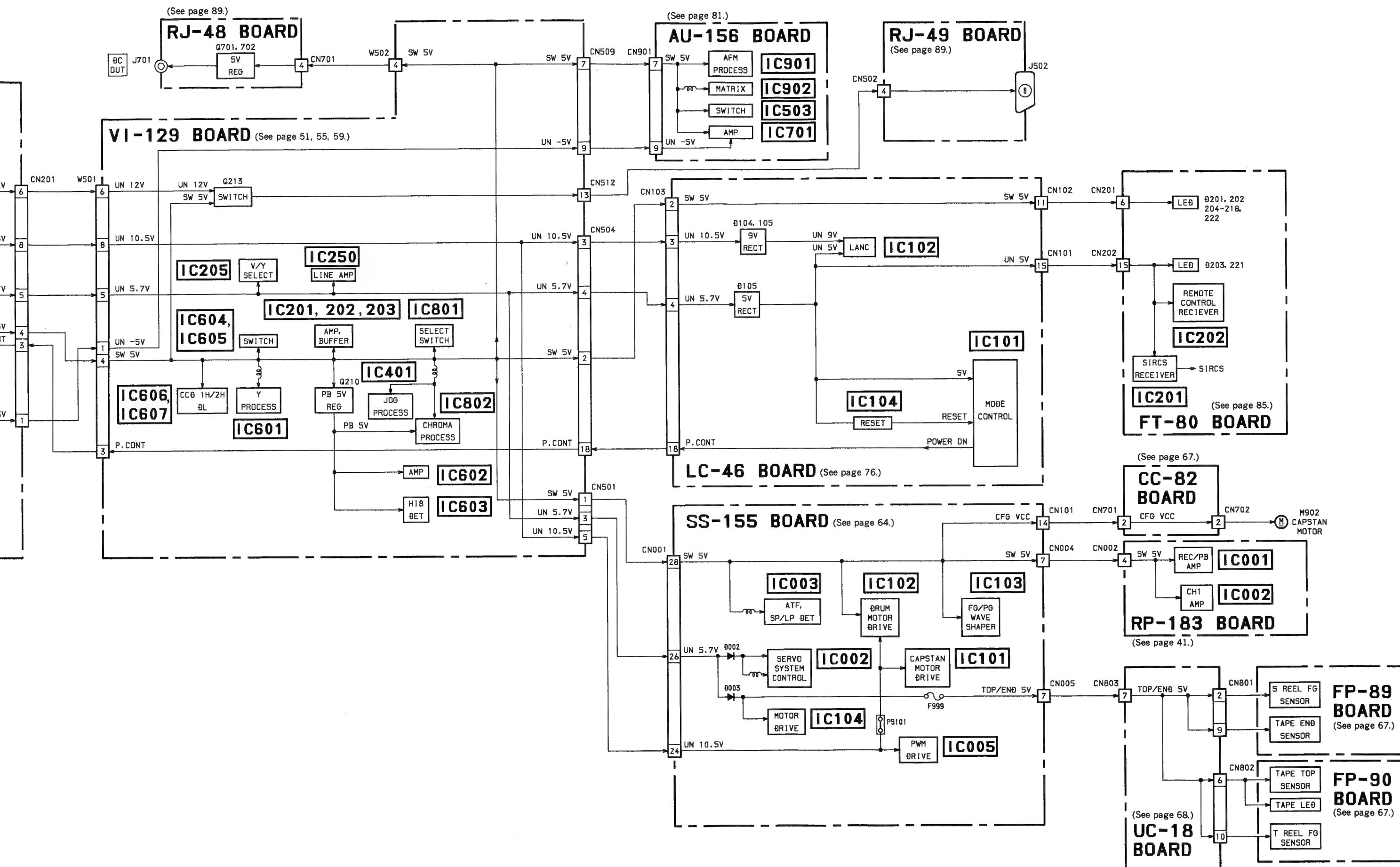




4-8. POWER BLOCK DIAGRAM

• The boards which signals only pass through may be omitted.

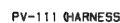




5-1. FRAME SCHEMATIC DIAGRAM







RP-183 BOARD	
CN001	A-3
CN002	B-1
CN003	C-3
D001	C-4
D002	C-3
IC001	B-3
IC002	B-2
Q001	E-4
Q002	E-3
Q003	A-4
Q006	E-1
Q007	C-1
Q008	D-2
Q012	F-3
Q013	D-3
Q014	D-2
Q016	F-4

5-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS



THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS
AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is
is printed in each block.)

● For printed wiring boards.

- : Through hole.
- ▨ : Pattern from the side which enables seeing.
- ▩ : Pattern of the rear side. *
- Circled numbers refer to waveforms.
- Chip diode anode/cathode indication.
A: anode, C: cathode

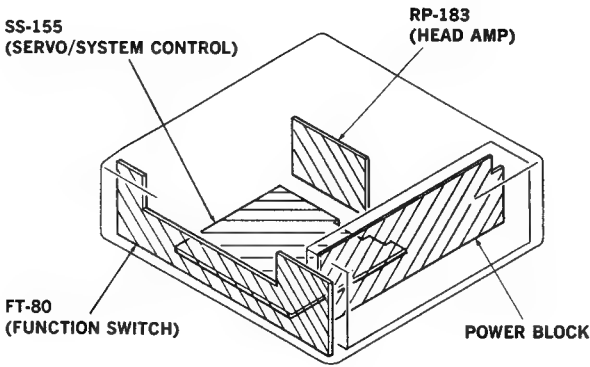
● For schematic diagram.

- Caution when replacing chip parts.
New parts must be attached after removal of chip.
Be careful not to heat the minus side of tantalum capacitor,
because it is damaged by the heat.
- All resistors are in ohms, 1/4W unless otherwise noted.
- Chip resistor are 1/8W or 1/10W unless otherwise noted.
kΩ: 1000Ω, MΩ: 1000kΩ.
- All capacitors are in μF unless otherwise noted. pF : μμF.
50V or less are not indicated except for electrolytics and
tantalums.
- All variable and adjustable resistors have characteristic curve B,
unless otherwise noted.
- ▭ : nonflammable resistor.
- ▭ : fusible resistor.
- : panel designation.
- △ : internal component.
- : adjustment for repair. *
- : B + Line. *
- - - : B - Line. *
- ↗ : IN/OUT direction of (+, -) B line. *
- Circled numbers refer to waveforms. *
- Voltages are dc between ground and measurement points. *
- Readings are taken with a color-bar signal input. *
- Readings are taken with a digital multimeter (DC10MΩ). *
- Voltage variations may be noted due to normal production
tolerances. *

Note: The components identified by mark  or dotted
line with mark  are critical for safety.
Replace only with part number specified.

When indicating parts by refer-
ence number, please include
the board name.

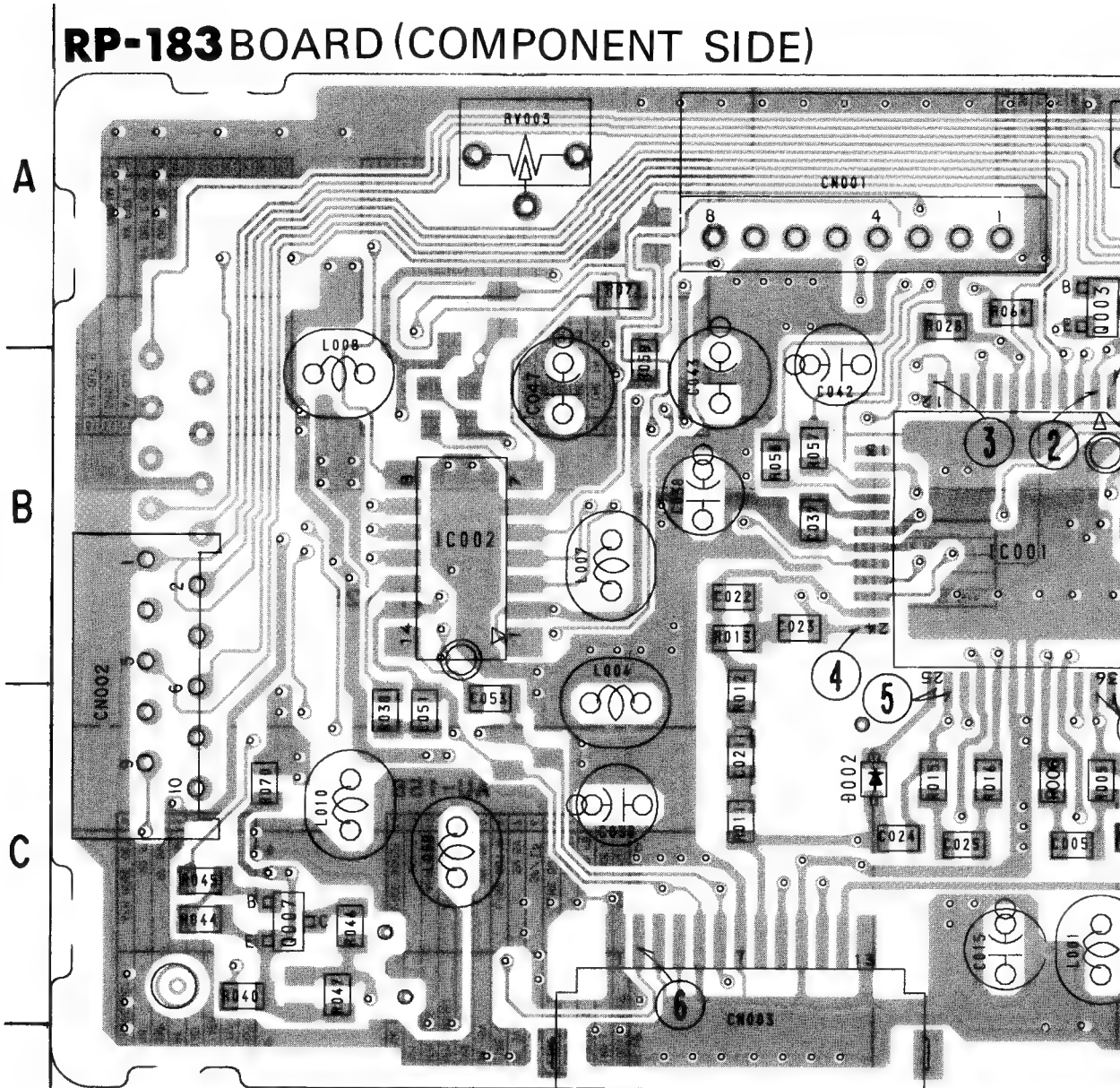
*: indicated by the color red.



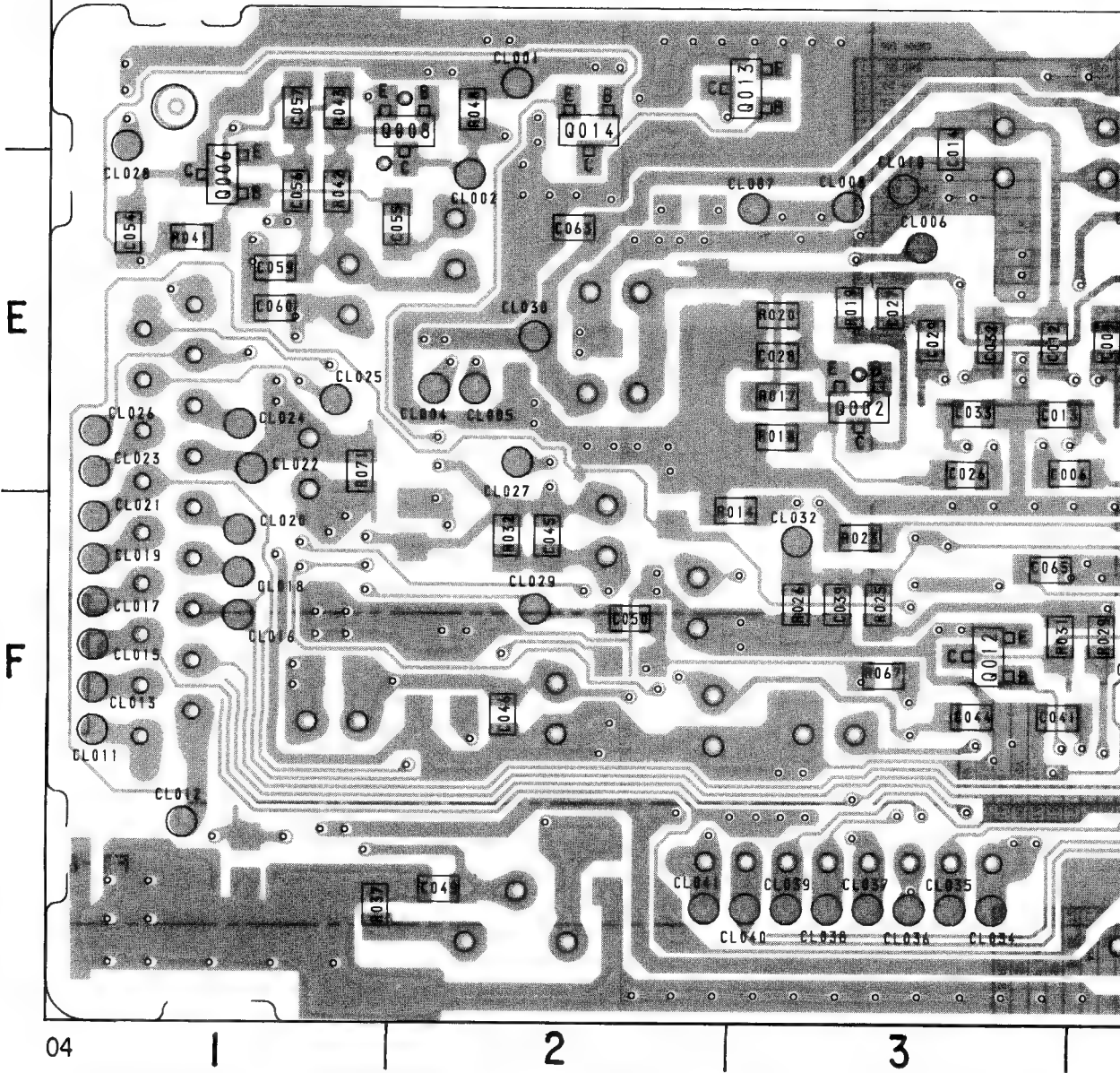
RP-183 (REC/PB AMP) PRINTED WIRING BOARD
 —Ref. No. RP-183 BOARD: 1000 series—

RP-183 BOARD	
CN001	A-3
CN002	B-1
CN003	C-3
D001	C-4
D002	C-3
IC001	B-3
IC002	B-2
Q001	E-4
Q002	E-3
Q003	A-4
Q006	E-1
Q007	C-1
Q008	D-2
Q012	F-3
Q013	D-3
Q014	D-2
Q016	F-4

RP-183 BOARD (COMPONENT SIDE)



RP-183 BOARD (CONDUCTOR SIDE)



SCHEMATIC DIAGRAMS

PRINTED WIRING BOARDS

Note is

seeing.

of chip.
 of tantalum capacitor,

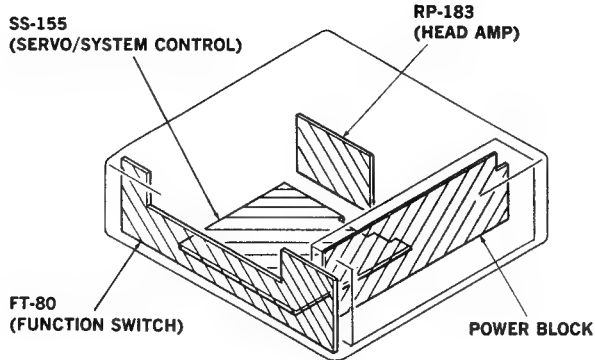
otherwise noted.
 otherwise noted.

oted. pF : μ F.
 electrolytics and

characteristic curve B,

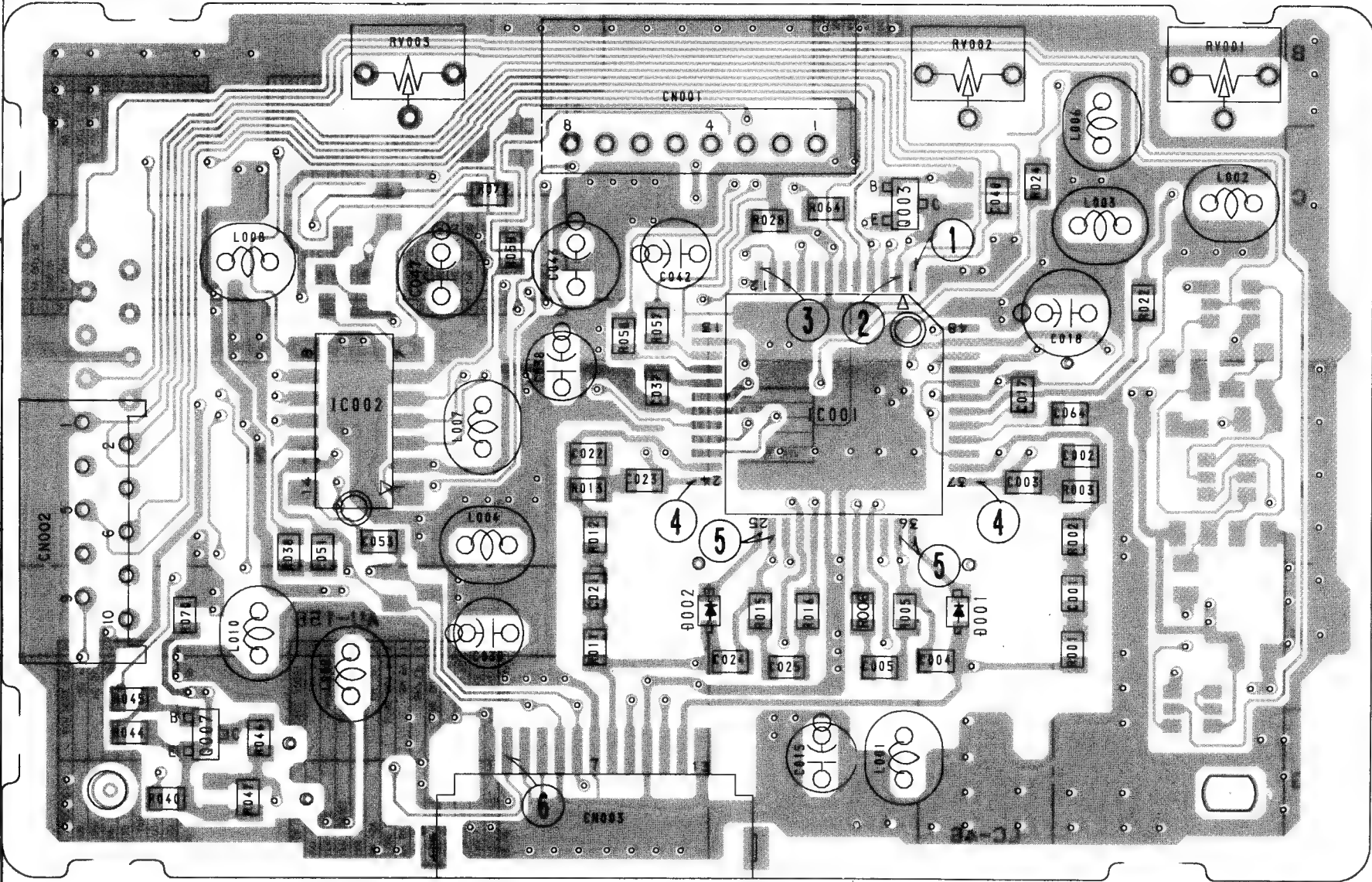
urement points.*
 nput.*
 ter (DC10M Ω).
 to normal production

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 ty.
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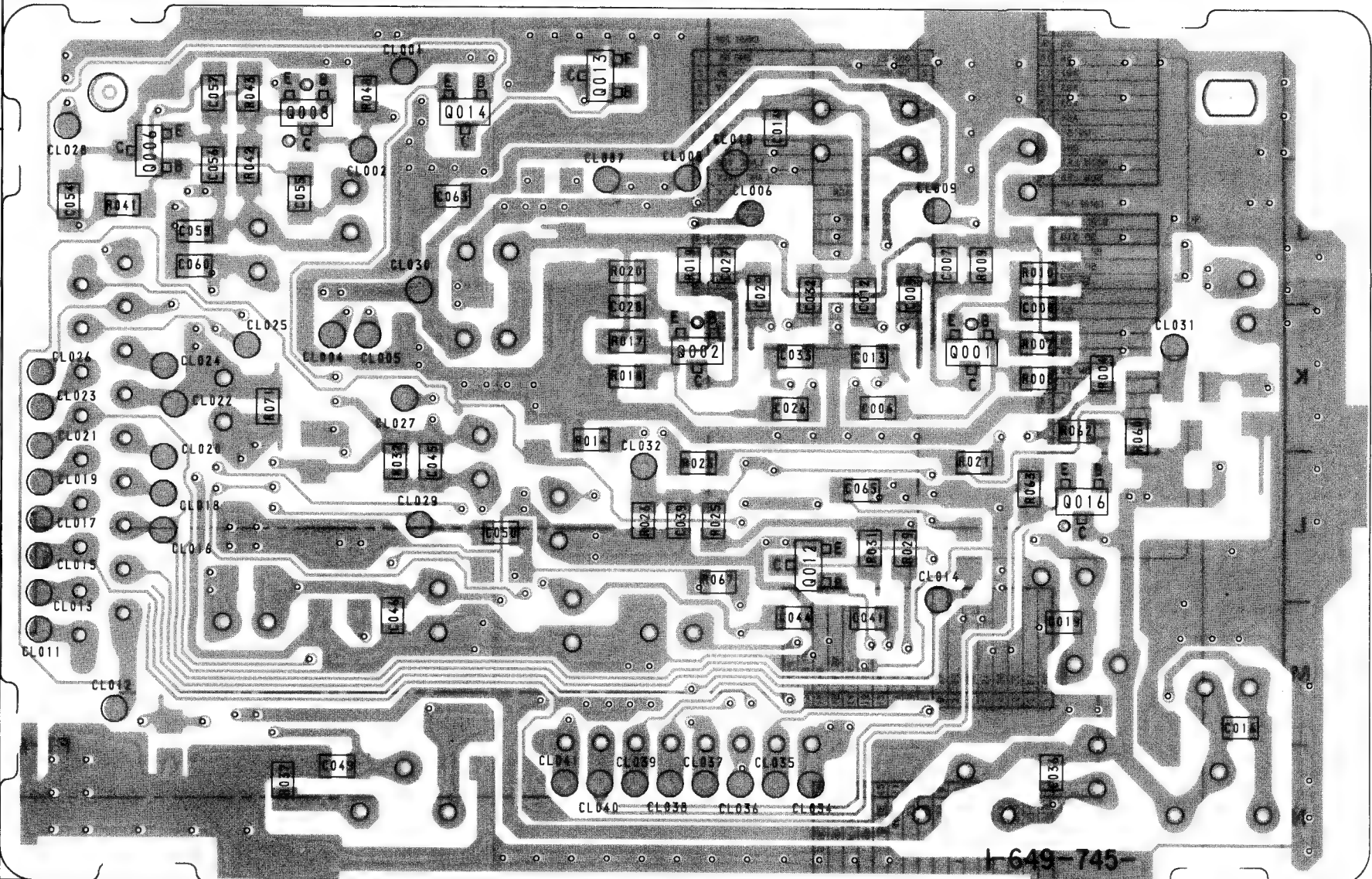


—Ref. No. RP-183 BOARD: 1000 series—

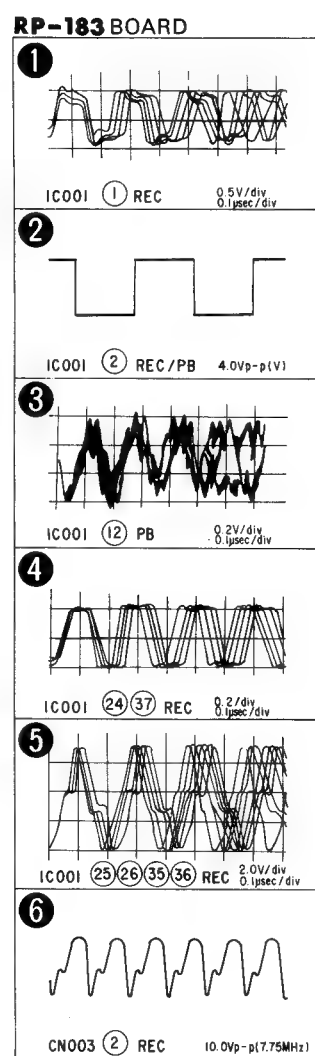
RP-183 BOARD (COMPONENT SIDE)



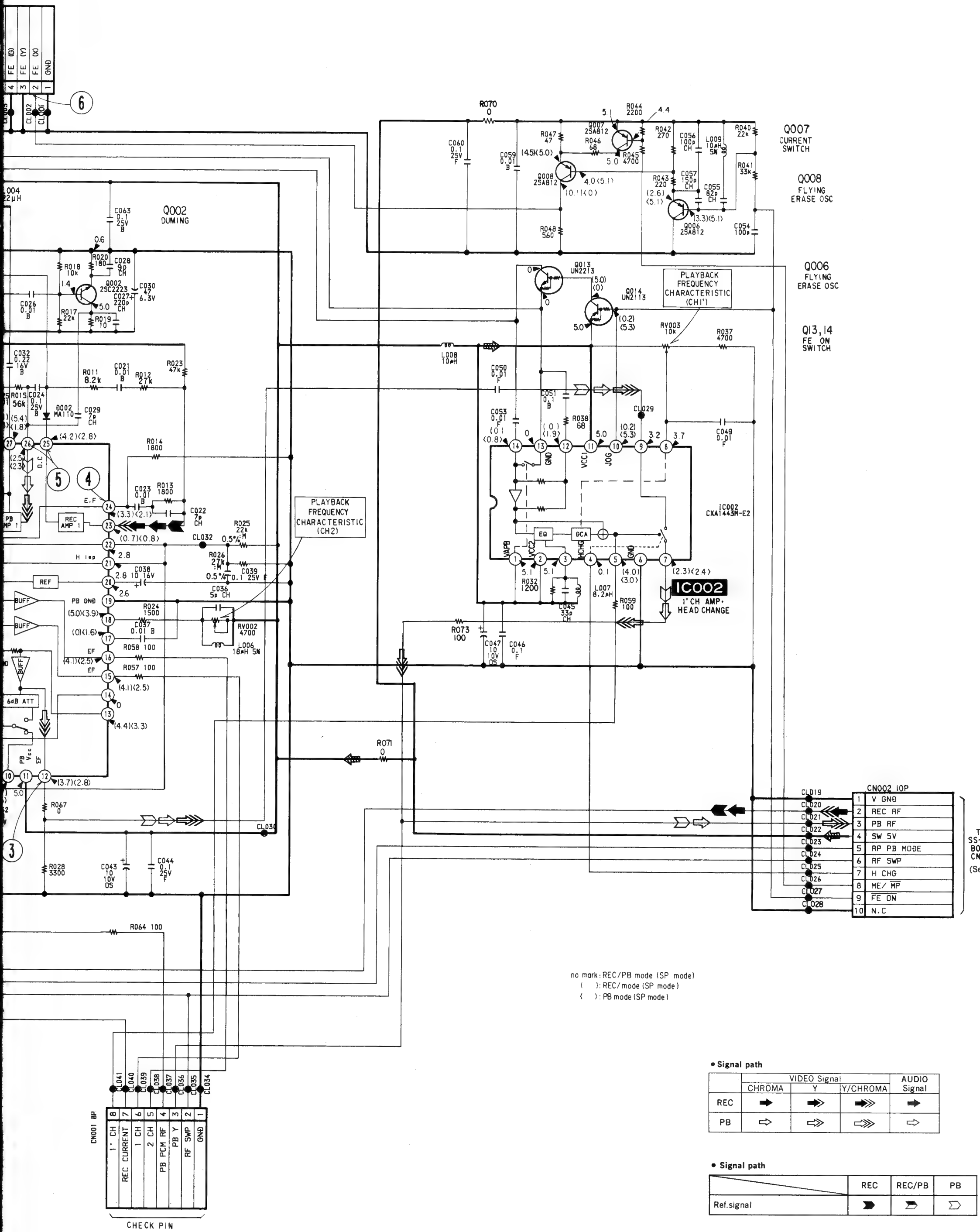
RP-183 BOARD (CONDUCTOR SIDE)



—Ref. No. RP-183 BOARD: 1000 series—



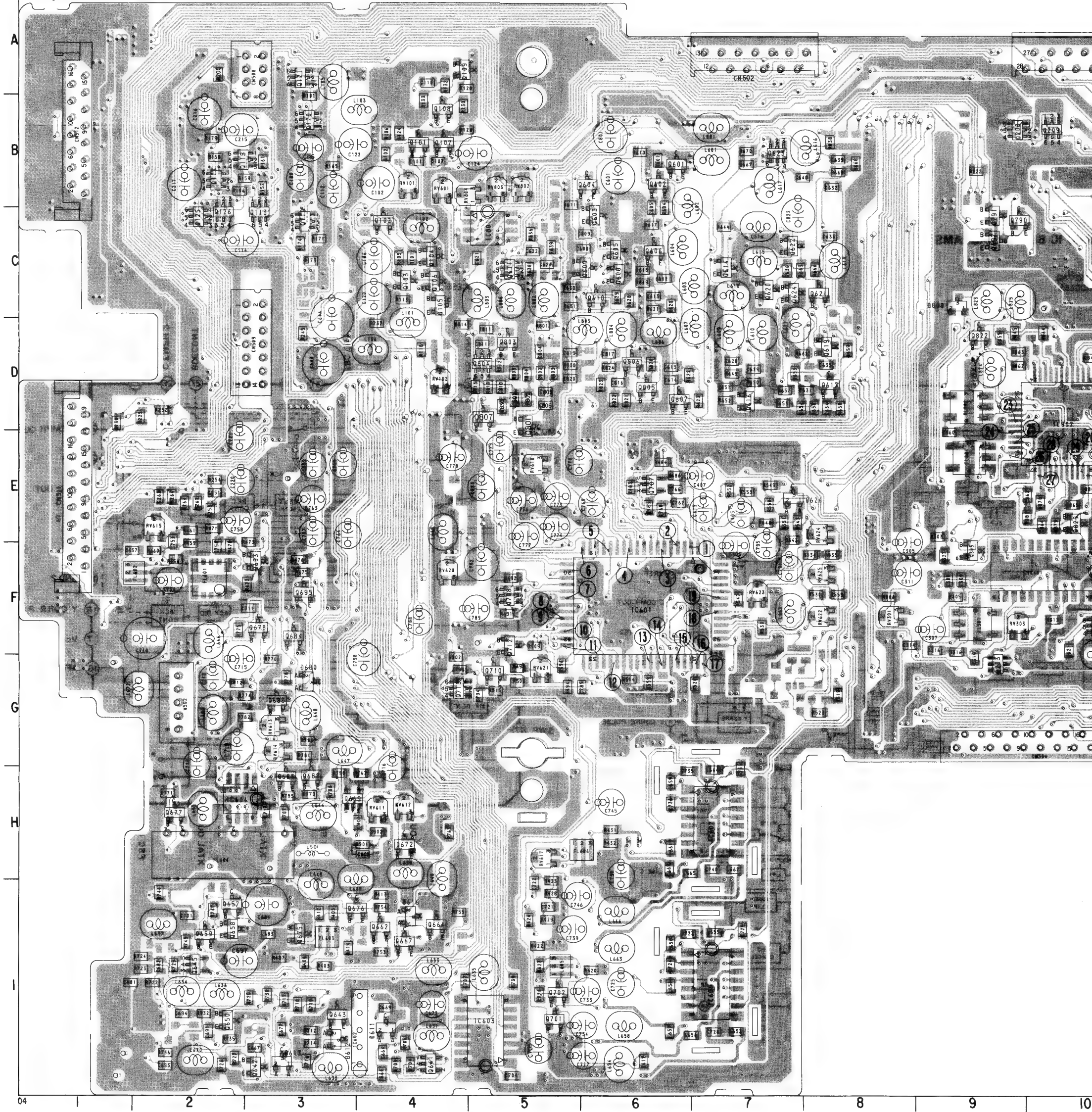
(See page 67.)

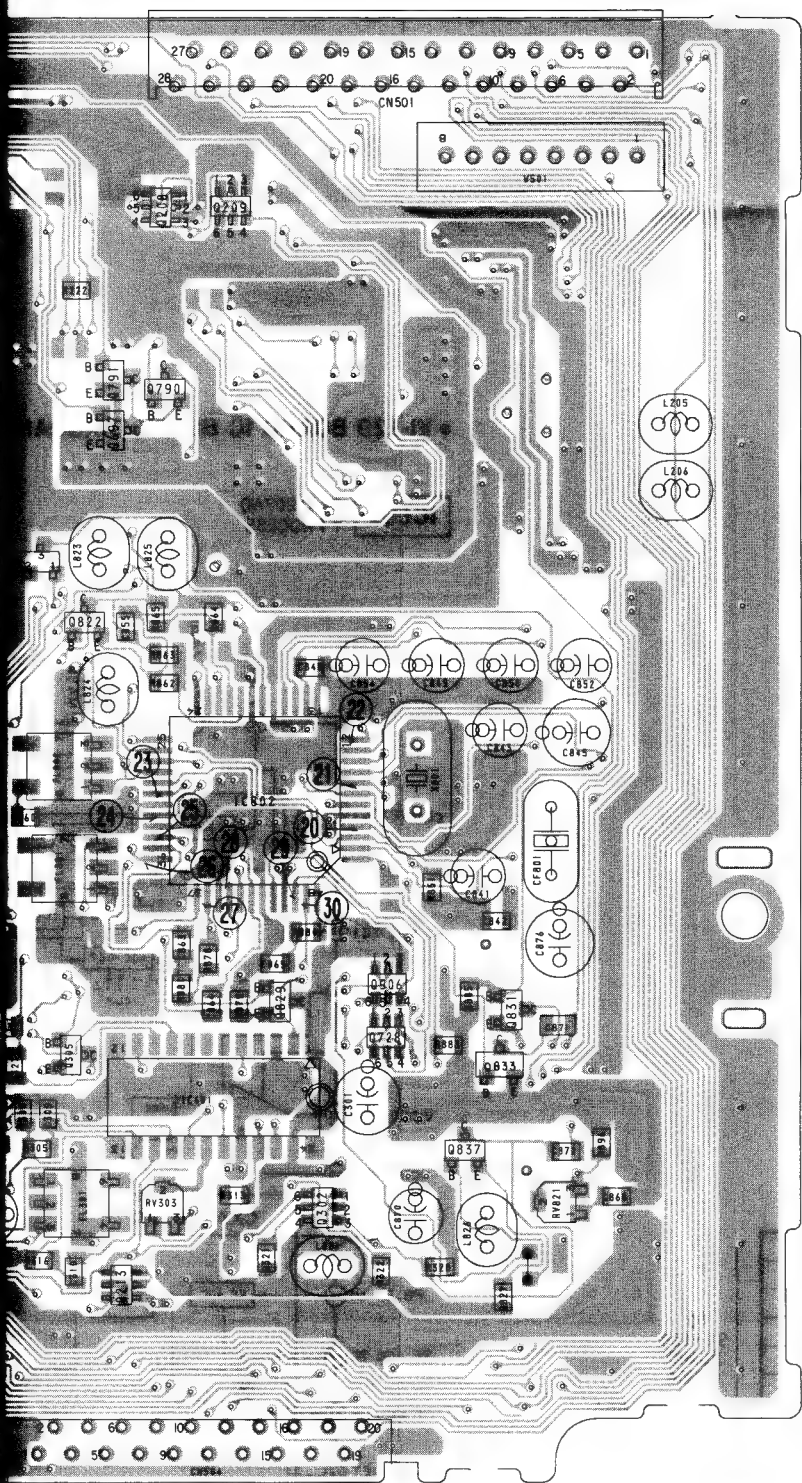


VI-129 (VIDEO IN/OUT) PRINTED WIRING BOARD

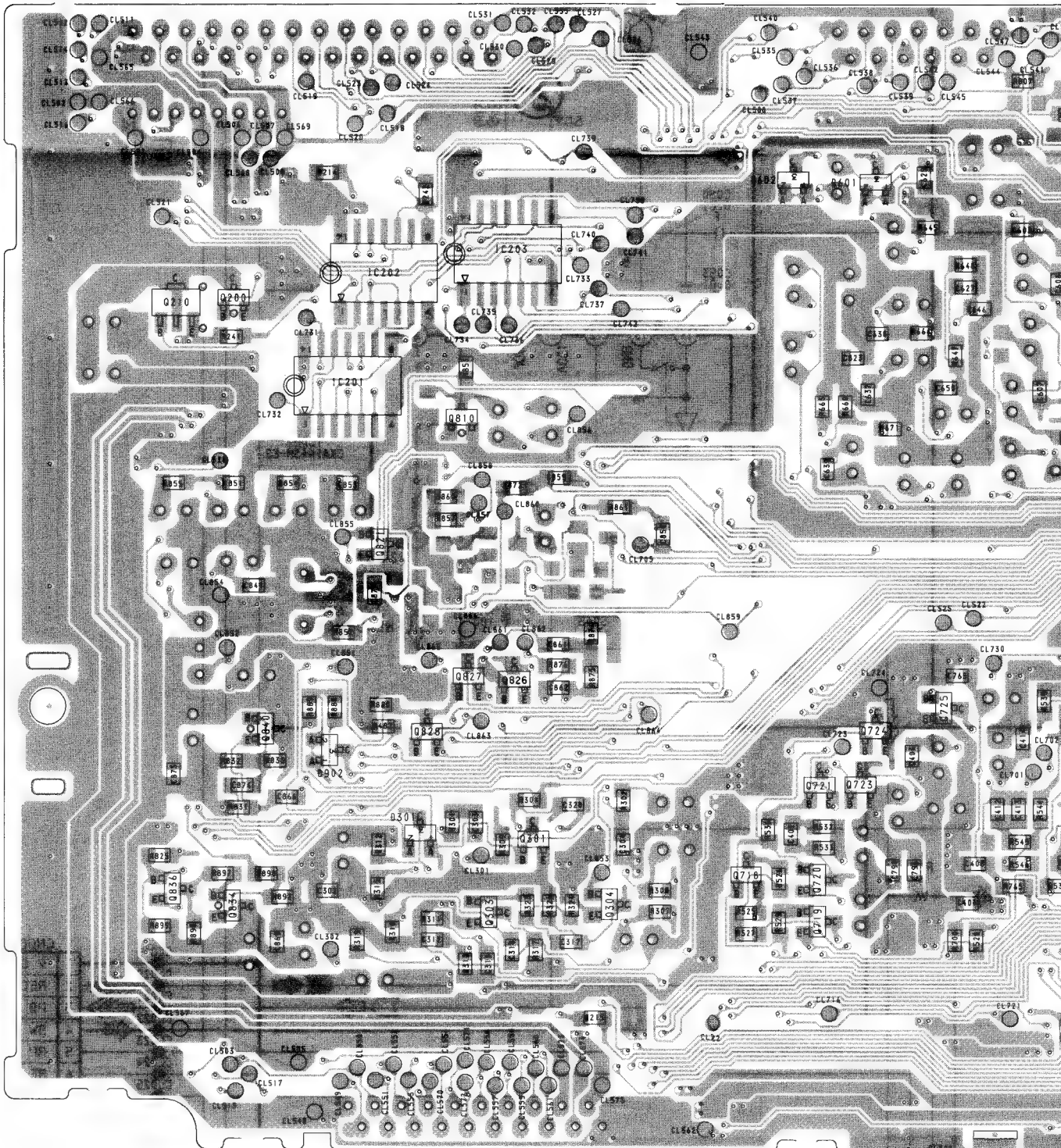
—Ref. No. VI-129 BOARD: 1000 series—

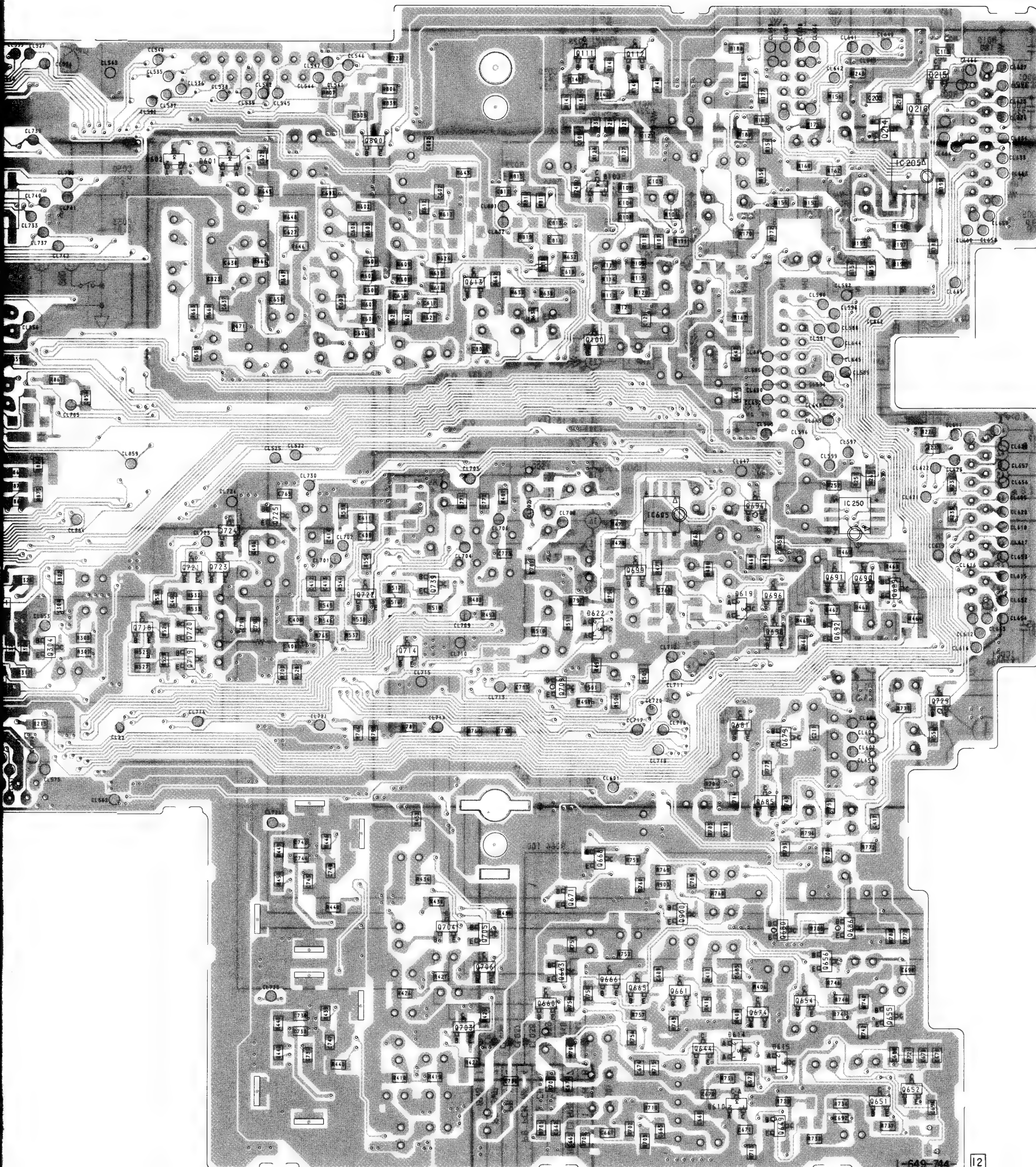
VI-129 BOARD (COMPONENT SIDE)



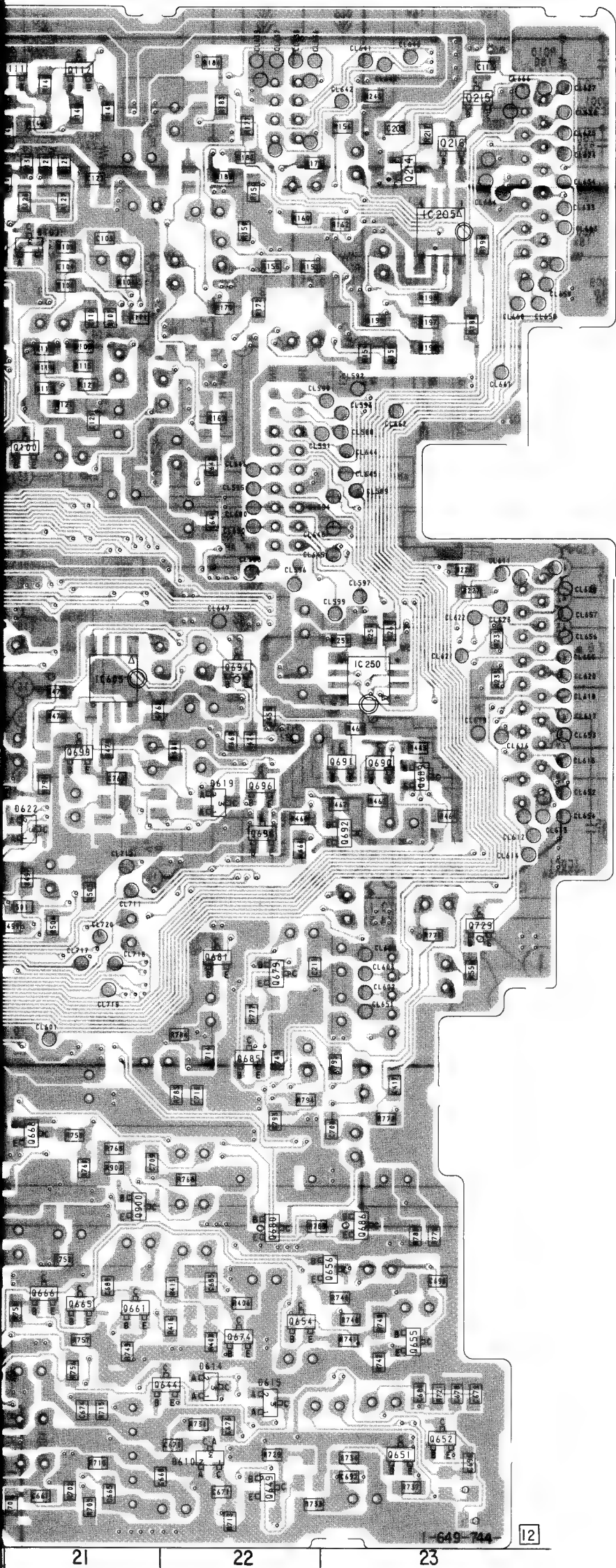


VI-129 BOARD (CONDUCTOR SIDE)





VI-129 BOARD		
CN501	A-10	Q620
CN502	A-7	Q621
CN504	G-10	Q622
CN508	A-3	Q623
CN509	D-3	Q624
CN511	E-1	Q641
CN512	B-1	Q642
		Q643
D101	B-21	Q644
D301	F-15	Q645
D601	B-17	Q649
D602	B-17	Q650
D610	I-22	Q651
D611	I-4	Q652
D612	I-3	Q654
D613	I-3	Q655
D614	I-22	Q656
D615	I-22	Q657
D616	I-4	Q658
D619	F-22	Q659
D622	F-21	Q660
D626	E-7	Q661
D680	G-3	Q662
D800	C-9	Q663
D902	E-14	Q664
		Q665
IC201	C-15	Q666
IC202	B-15	Q667
IC203	B-15	Q668
IC205	B-23	Q669
IC250	E-23	Q671
IC401	F-10	Q672
IC601	F-6	Q674
IC602	J-4	Q675
IC603	J-5	Q676
IC604	H-2	Q677
IC605	E-21	Q678
IC606	I-7	Q679
IC607	H-7	Q680
IC801	C-5	Q681
IC802	D-10	Q682
		Q683
Q100	C-21	Q684
Q101	B-4	Q685
Q102	C-4	Q686
Q103	C-4	Q688
Q104	C-4	Q689
Q105	C-4	Q690
Q106	C-4	Q691
Q107	B-4	Q692
Q108	B-4	Q693
Q109	A-4	Q694
Q111	A-21	Q695
Q112	A-21	Q696
Q113	C-3	Q697
Q114	B-2	Q698
Q115	B-2	Q699
Q119	C-3	Q701
Q120	B-3	Q702
Q121	A-3	Q703
Q125	C-2	Q704
Q126	C-2	Q705
Q200	C-14	Q706
Q208	B-9	Q707
Q209	B-10	Q708
Q210	C-14	Q709
Q213	G-9	Q710
Q214	B-23	Q712
Q215	A-23	Q713
Q216	B-23	Q714
Q301	F-16	Q718
Q302	F-10	Q719
Q303	F-15	Q720
Q304	F-16	Q721
Q305	F-9	Q722
Q601	B-6	Q723
Q602	B-6	Q724
Q603	B-6	Q725
Q604	B-6	Q728
Q605	C-6	Q729
Q606	C-6	Q739
Q607	D-6	Q790
Q608	C-6	Q791
Q609	C-6	Q800
Q610	C-6	Q801
Q611	C-5	Q803
Q613	C-20	Q804
Q614	C-7	Q805
Q616	D-7	Q806
Q617	D-8	Q807
Q619	D-8	Q810



VI-129 BOARD

CN501 A-10
CN502 A-7
CN504 G-10
CN508 A-3
CN509 D-3
CN511 E-1
CN512 B-1

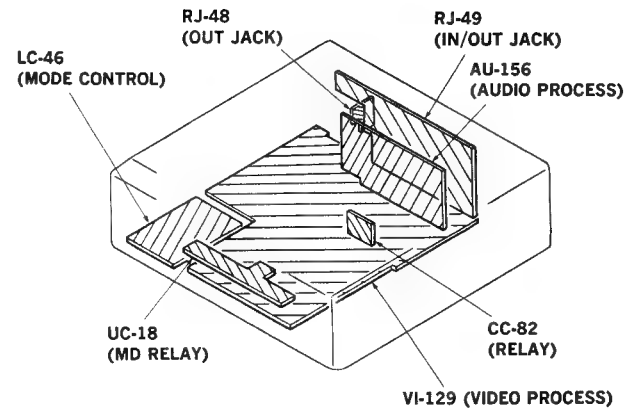
D101 B-21
D301 F-15
D601 B-17
D602 B-17
D610 I-22
D611 I-4
D612 I-3
D613 I-3
D614 I-22
D615 I-22
D616 I-4
D619 F-22
D622 F-21
D626 E-7
D680 G-3
D800 C-9
D902 E-14

IC201 C-15
IC202 B-15
IC203 B-15
IC205 B-23
IC250 E-23
IC401 F-10
IC601 F-6
IC602 J-4
IC603 J-5
IC604 H-2
IC605 E-21
IC606 I-7
IC607 H-7
IC801 C-5
IC802 D-10

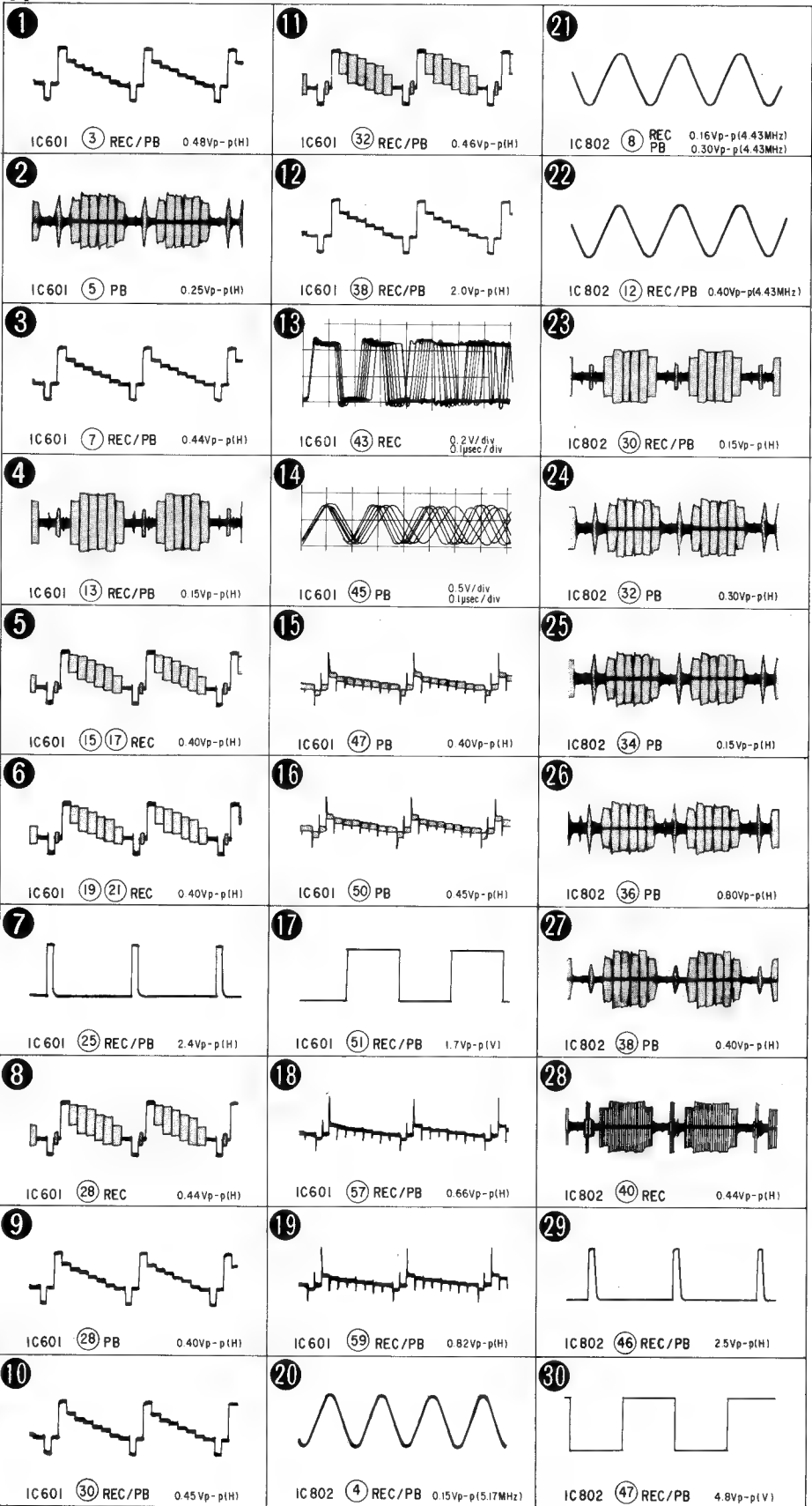
Q100 C-21
Q101 B-4
Q102 C-4
Q103 C-4
Q104 C-4
Q105 C-4
Q106 C-4
Q107 B-4
Q108 B-4
Q109 A-4
Q111 A-21
Q112 A-21
Q113 C-3
Q114 B-2
Q115 B-2
Q119 C-3
Q120 B-3
Q121 A-3
Q125 C-2
Q126 C-2
Q200 C-14
Q208 B-9
Q209 B-10
Q210 C-14
Q213 G-9
Q214 B-23
Q215 A-23
Q216 B-23
Q301 F-16
Q302 F-10
Q303 F-15
Q304 F-16
Q305 F-9
Q601 B-6
Q602 B-6
Q603 B-6
Q604 B-6
Q605 C-6
Q606 C-6
Q607 D-6
Q608 C-6
Q609 C-6
Q610 C-6
Q611 C-5
Q613 C-20
Q614 C-7
Q616 D-7
Q617 D-8
Q619 D-8

Q620 C-7
Q621 C-8
Q622 C-7
Q623 B-7
Q624 C-7
Q641 I-4
Q642 I-3
Q643 I-3
Q644 I-22
Q645 I-2
Q649 J-22
Q650 I-2
Q651 I-23
Q652 I-23
Q654 I-22
Q655 I-23
Q656 I-23
Q657 I-2
Q658 I-2
Q659 I-2
Q660 I-20
Q661 I-21
Q662 I-4
Q663 I-20
Q664 I-4
Q665 I-21
Q666 I-21
Q667 I-4
Q668 H-21
Q669 H-3
Q671 H-20
Q672 H-4
Q674 I-22
Q675 I-3
Q676 I-4
Q677 H-2
Q678 F-3
Q679 G-22
Q680 H-22
Q681 G-22
Q682 H-3
Q683 H-3
Q684 F-3
Q685 G-22
Q686 H-23
Q688 G-3
Q689 F-23
Q690 E-23
Q691 E-23
Q692 F-23
Q693 F-3
Q694 E-22
Q695 F-3
Q696 F-22
Q697 C-8
Q698 F-22
Q699 E-21
Q701 I-5
Q702 I-5
Q703 I-20
Q704 H-19
Q705 H-20
Q706 I-20
Q707 E-6
Q708 F-5
Q709 F-20
Q710 G-5
Q712 F-5
Q713 G-4
Q714 F-19
Q718 F-17
Q719 F-17
Q720 F-17
Q721 E-17
Q722 F-19
Q723 E-17
Q724 E-18
Q725 E-18
Q728 E-10
Q729 F-23
Q739 E-19
Q790 C-9
Q791 C-9
Q800 B-19
Q801 D-5
Q803 D-5
Q804 D-5
Q805 D-6
Q806 D-6
Q807 D-5
Q810 C-15

Q821 D-15
Q822 D-9
Q826 E-16
Q827 E-15
Q828 E-15
Q829 E-10
Q831 E-11
Q833 F-11
Q834 F-14
Q836 F-14
Q837 F-11
Q840 E-14
Q900 H-21
Q906 E-10



VI-129 BOARD



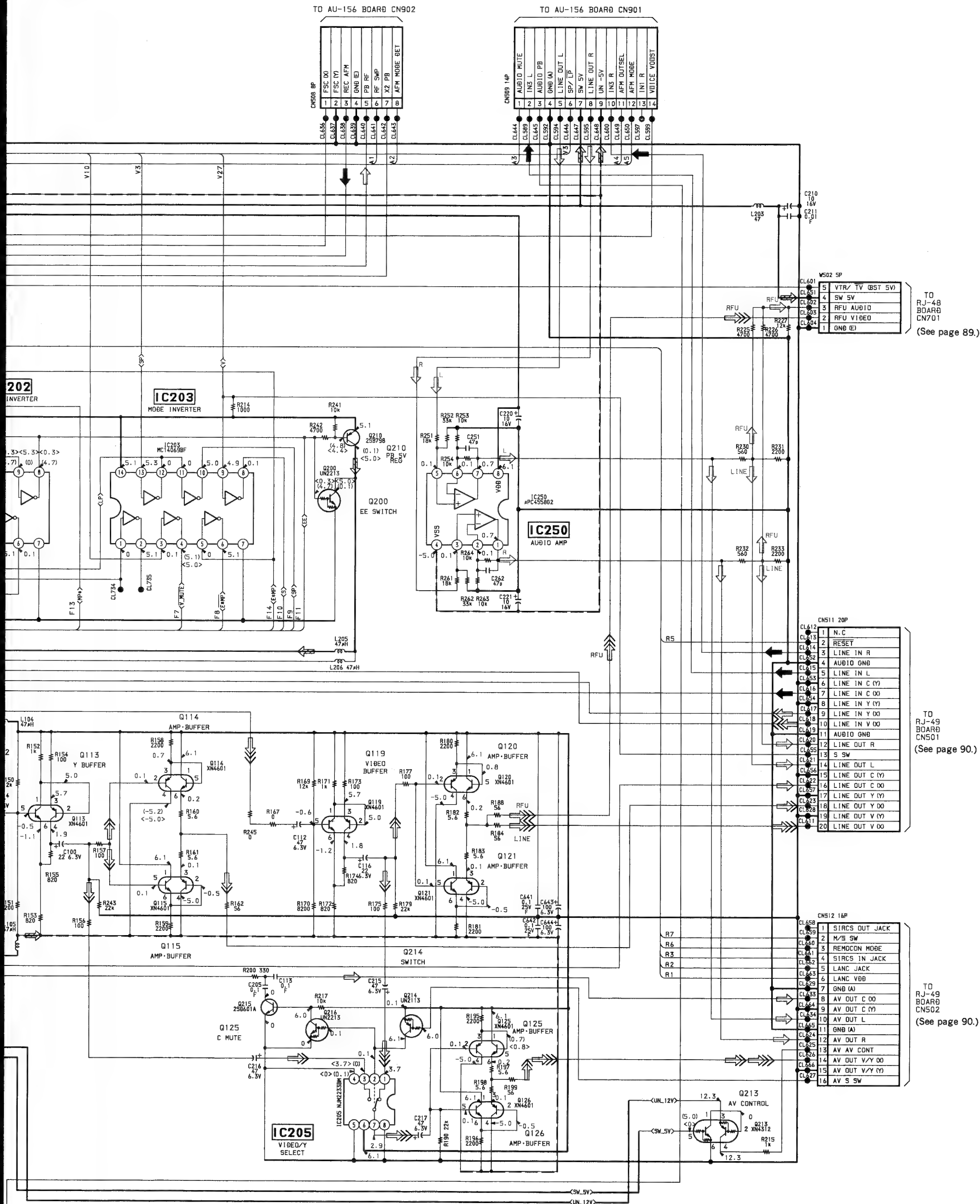


(See page 82.)

(See page 82.)

TO AU-156 BOARD CN902

TO AU-156 BOARD CN901



TO RJ-48 BOARD CN701 (See page 89.)

TO RJ-49 BOARD CN501 (See page 90.)

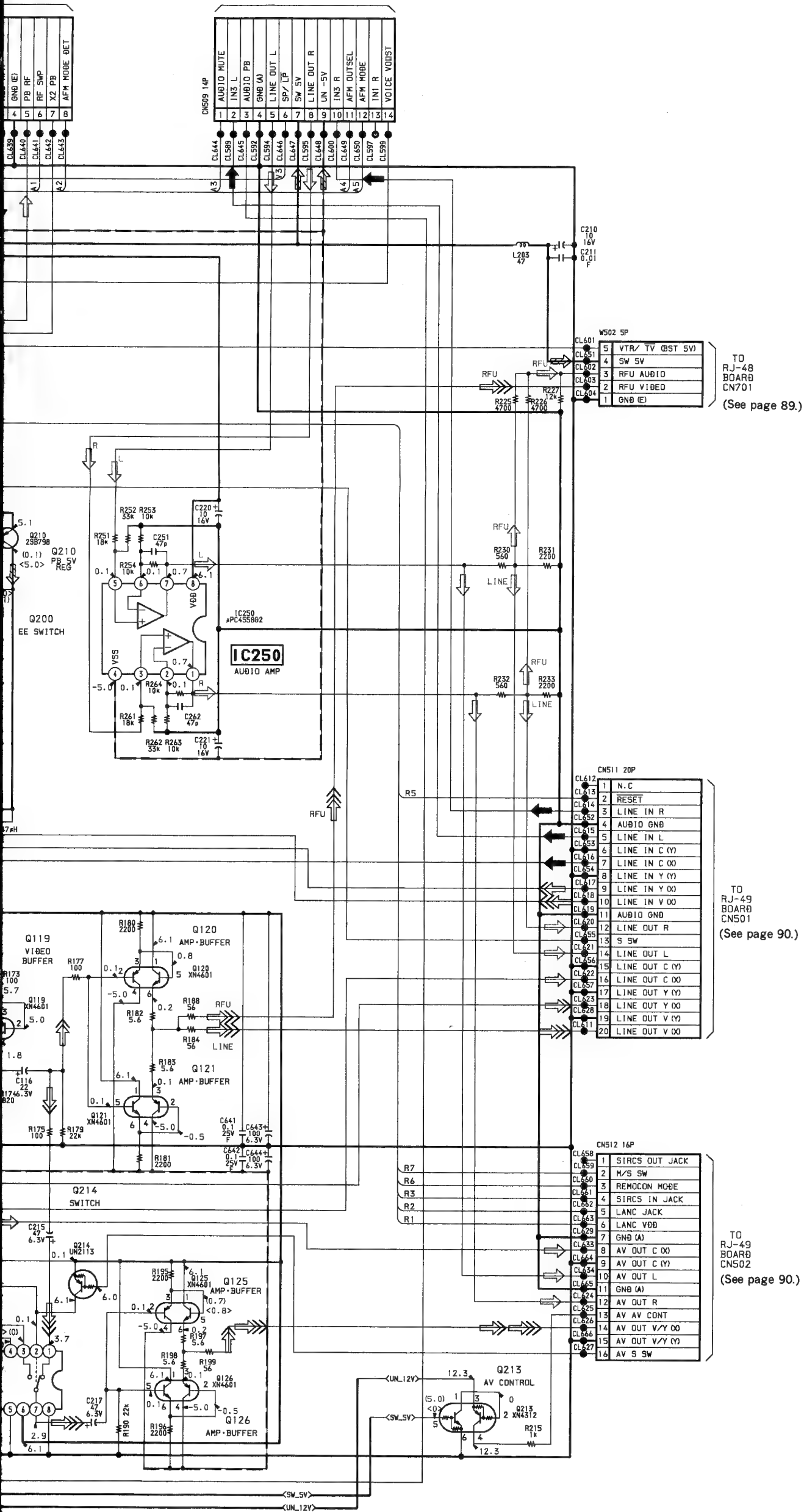
TO RJ-49 BOARD CN502 (See page 90.)

no mark : REC/PB mode (SP mode)
() : REC mode (SP mode)
< > : PB mode (SP mode)

(See page 82.)

56 BOARD CN902

TO AU-156 BOARD CN901





no mark : REC/PB mode (SP mode)
() : REC mode (SP mode)
< > : PB mode (SP mode)

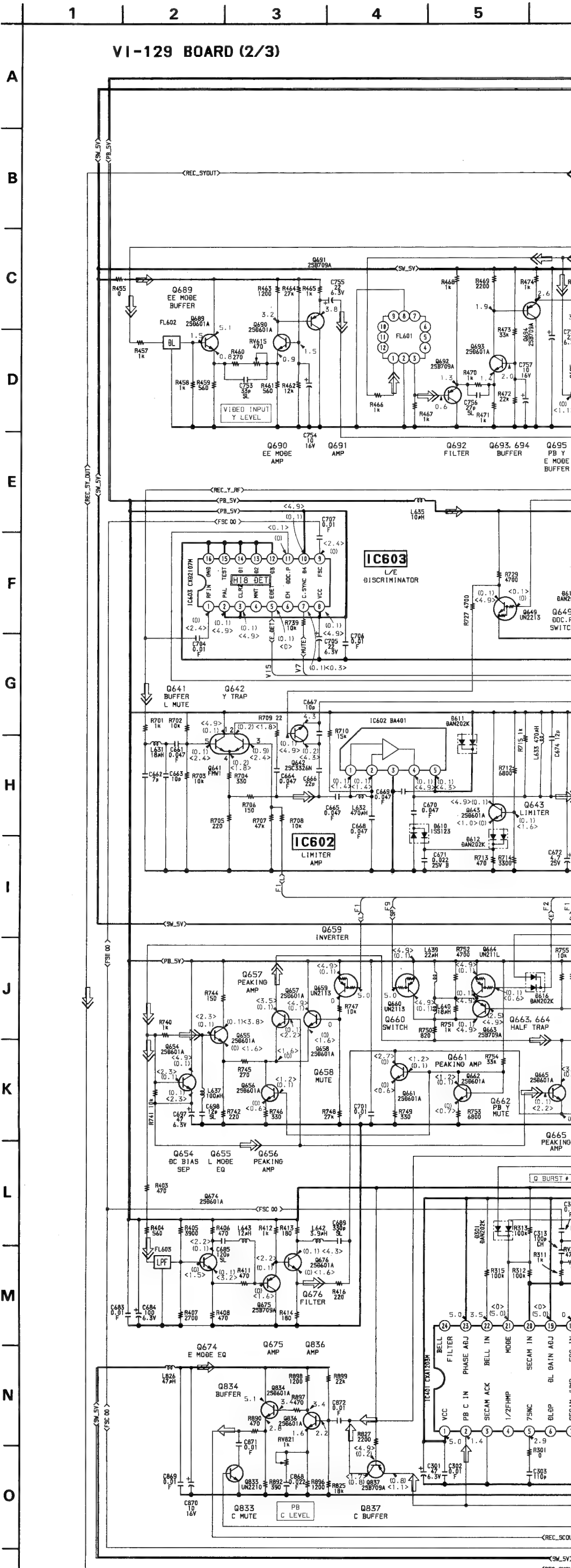
• Signal path

	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC	➡	➡➡	➡➡➡	➡
PB	➡	➡➡	➡➡➡	➡

• Signal path

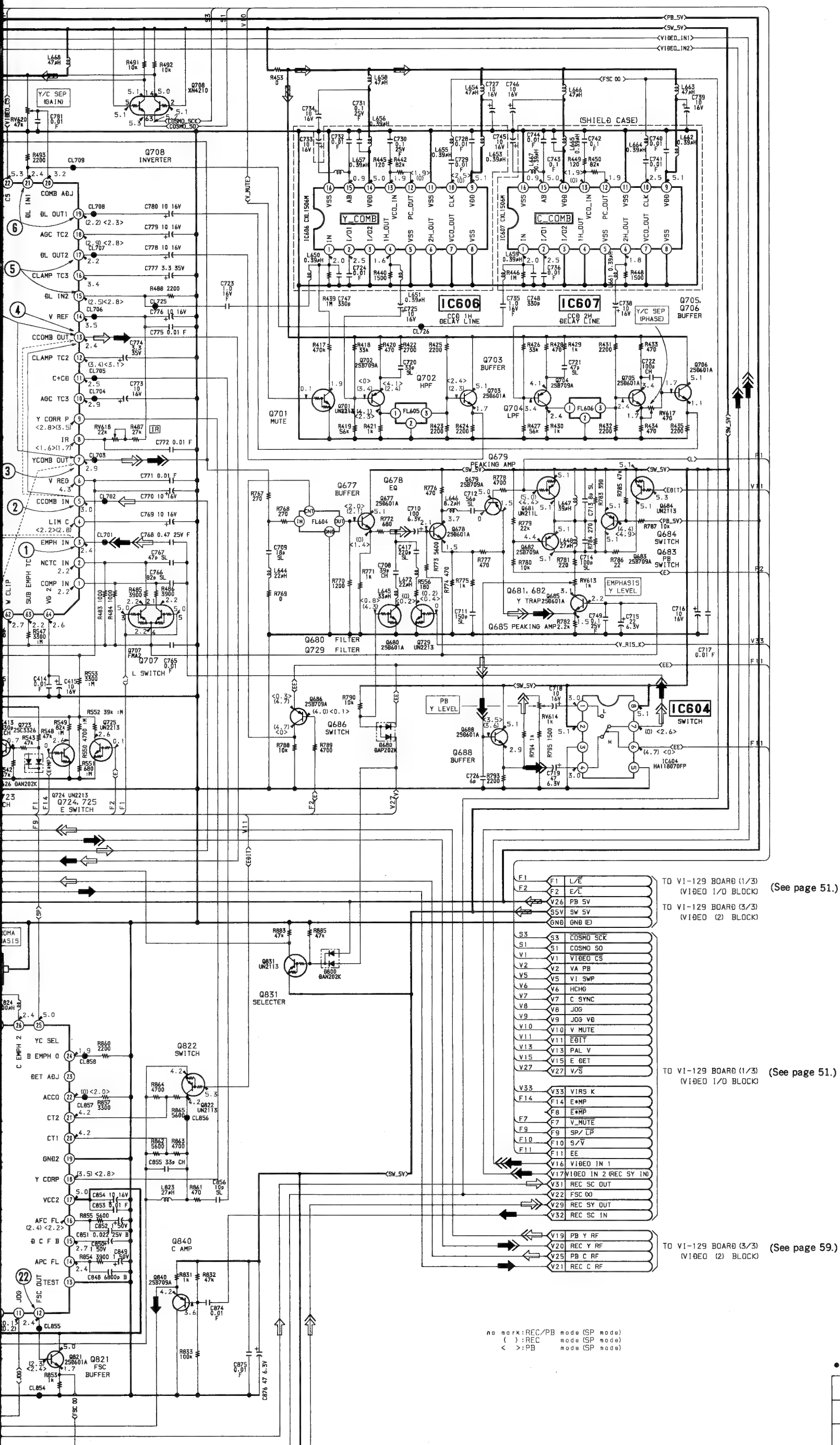
	REC	REC/PB	PB
Ref.signal	➡	➡➡	➡➡➡

Note: The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.





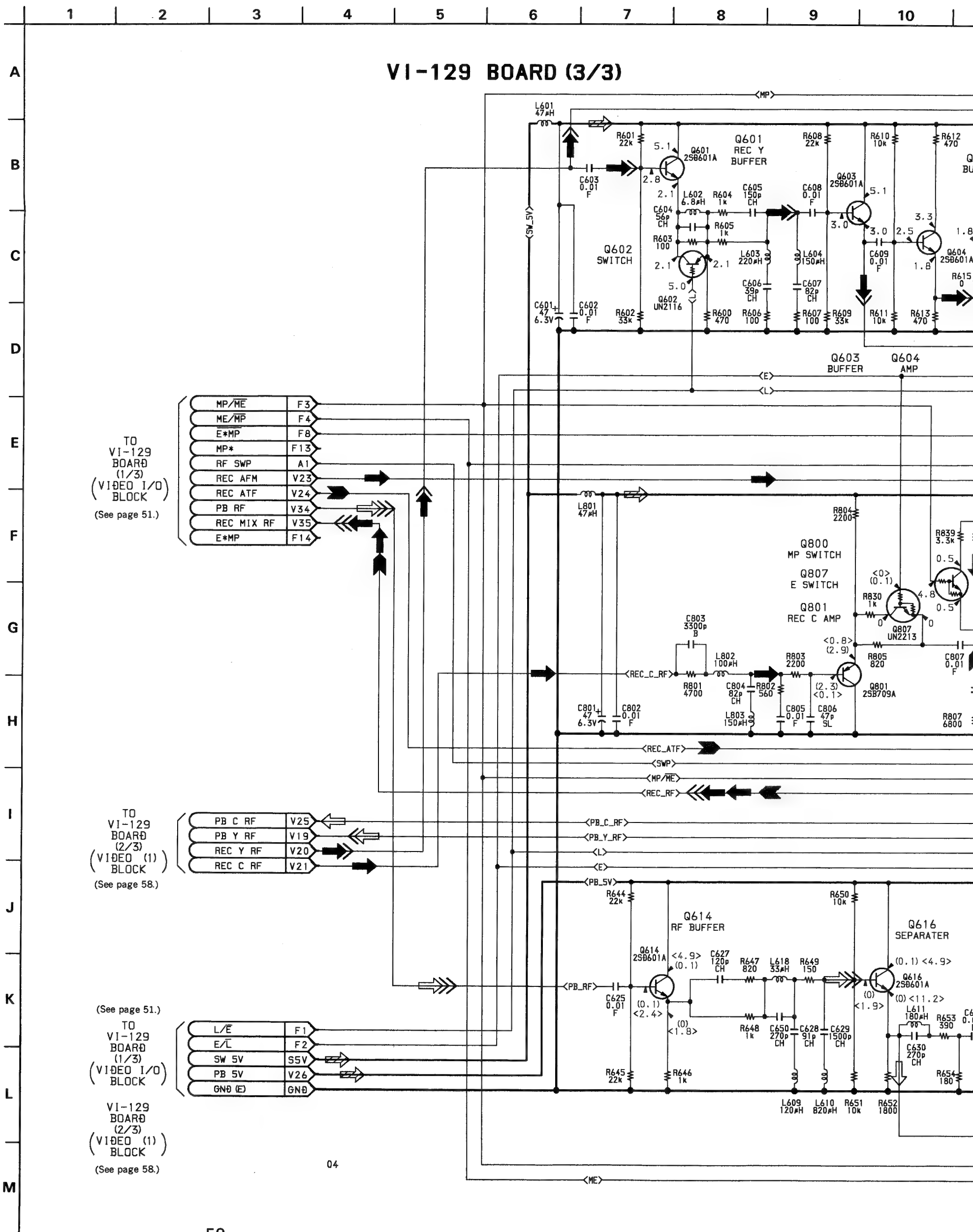




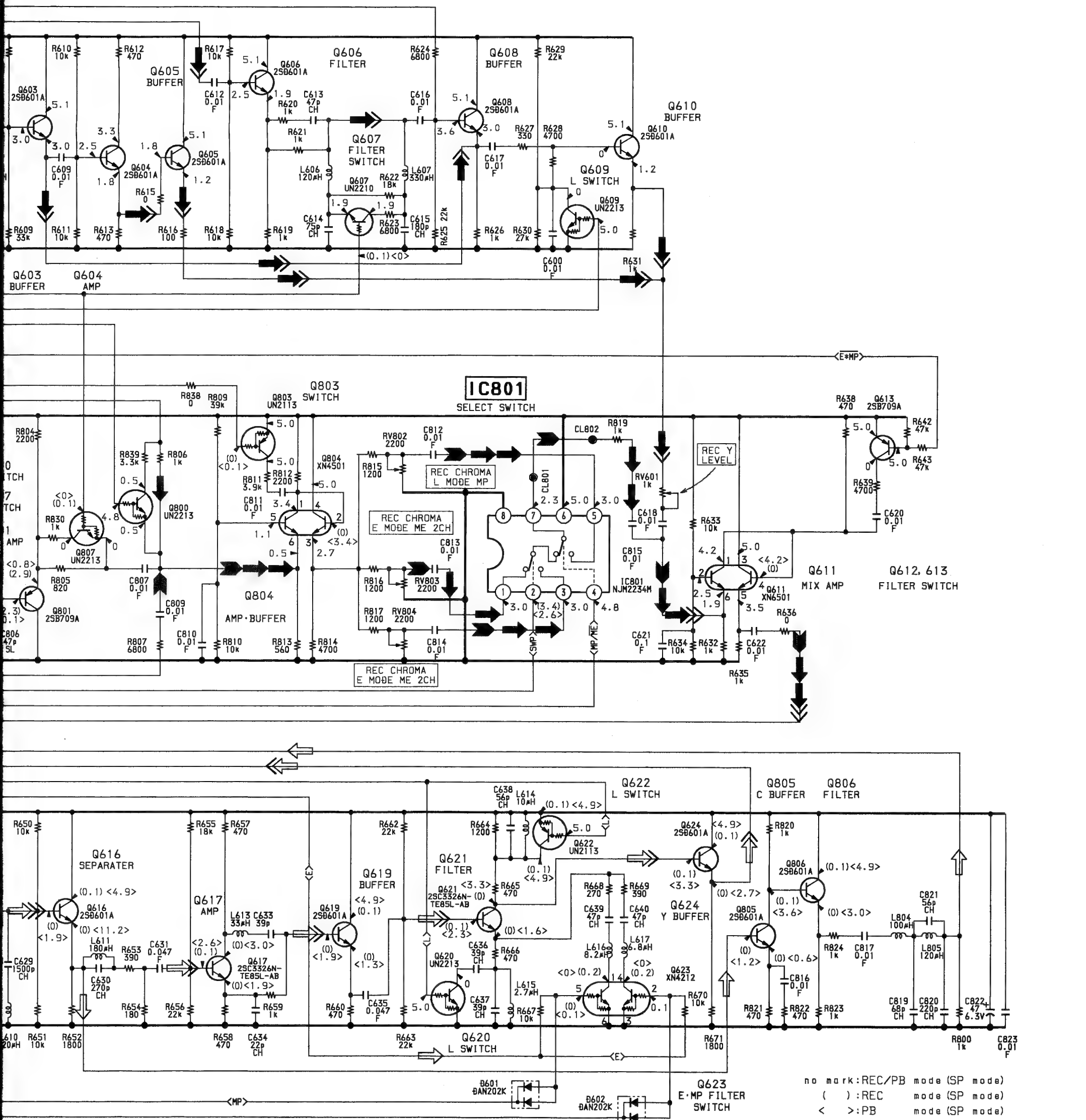
VI-129 (VIDEO PROCESS) SCHEMATIC DIAGRAM

• Refer to page 46 for Printed Wiring Board.

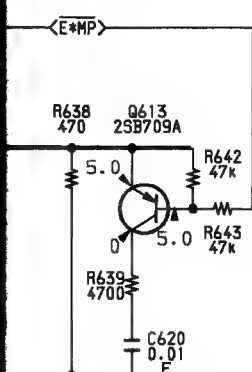
—Ref. No. VI-129 BOARD: 1000 series—



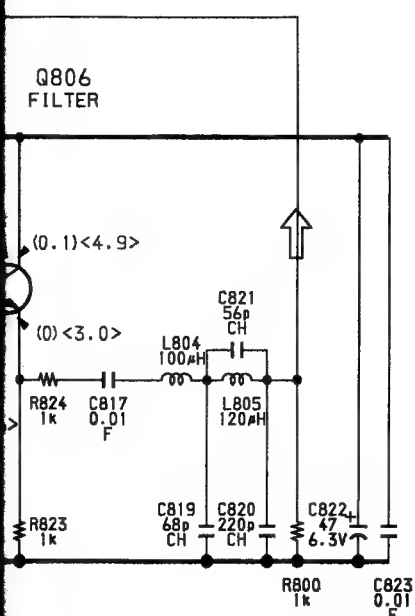
10 11 12 13 14 15 16 17 18 19 20



18 | 19 | 20






Q611	Q612, 613
X AMP	FILTER SWITCH







- **Signal path**

	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC	➡	➡➡	➡➡➡	➡
PB	➡	➡➡	➡➡➡	➡

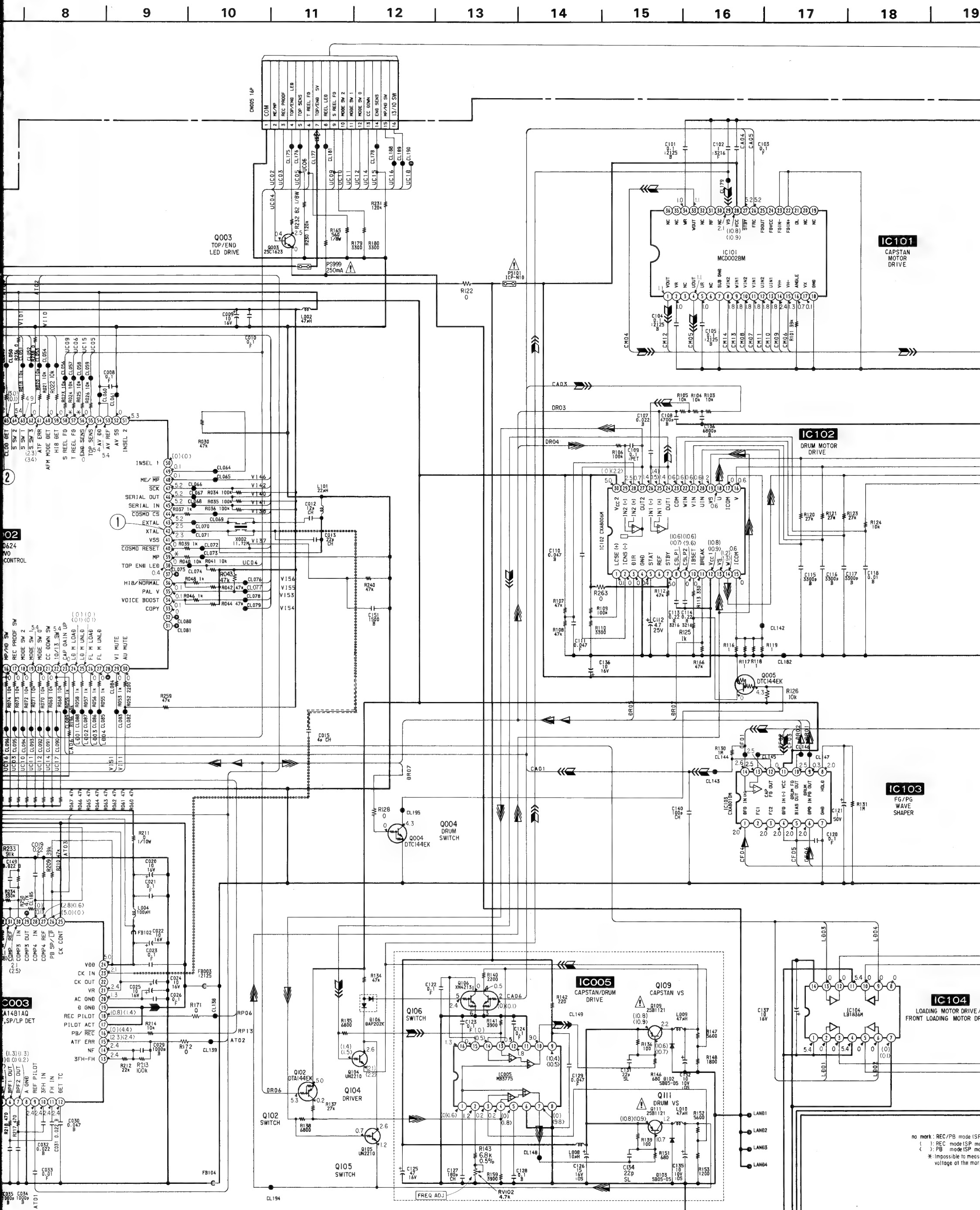
- **Signal path**

	REC	REC/PB	PB
Ref.signal			

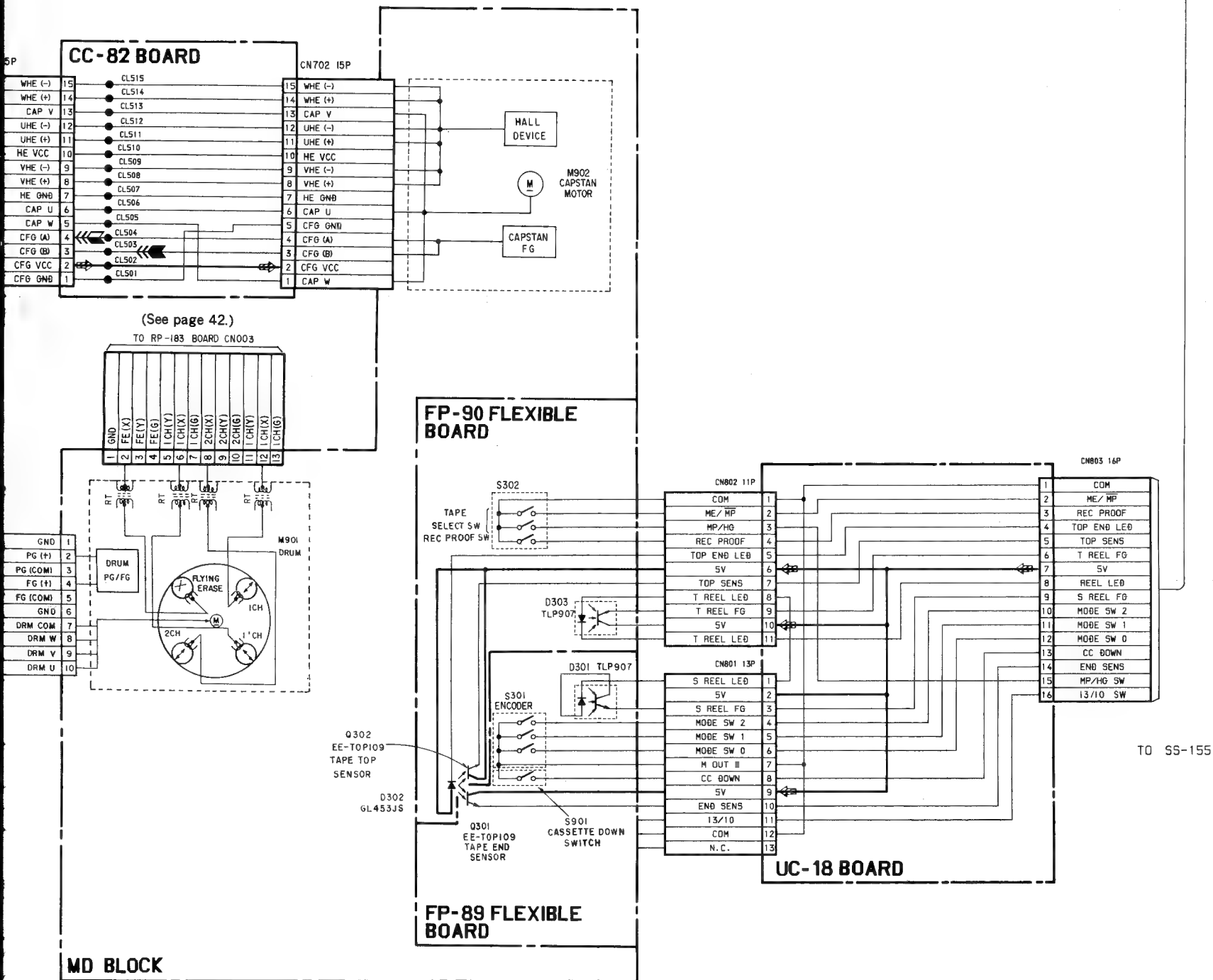
	AUDIO Signal
	
	

REC	REC/PB	PB
		

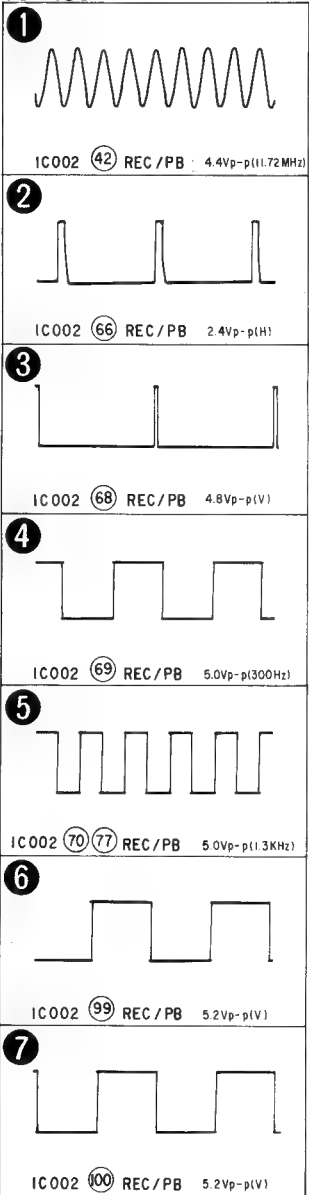








SS-155 BOARD



• Signal path

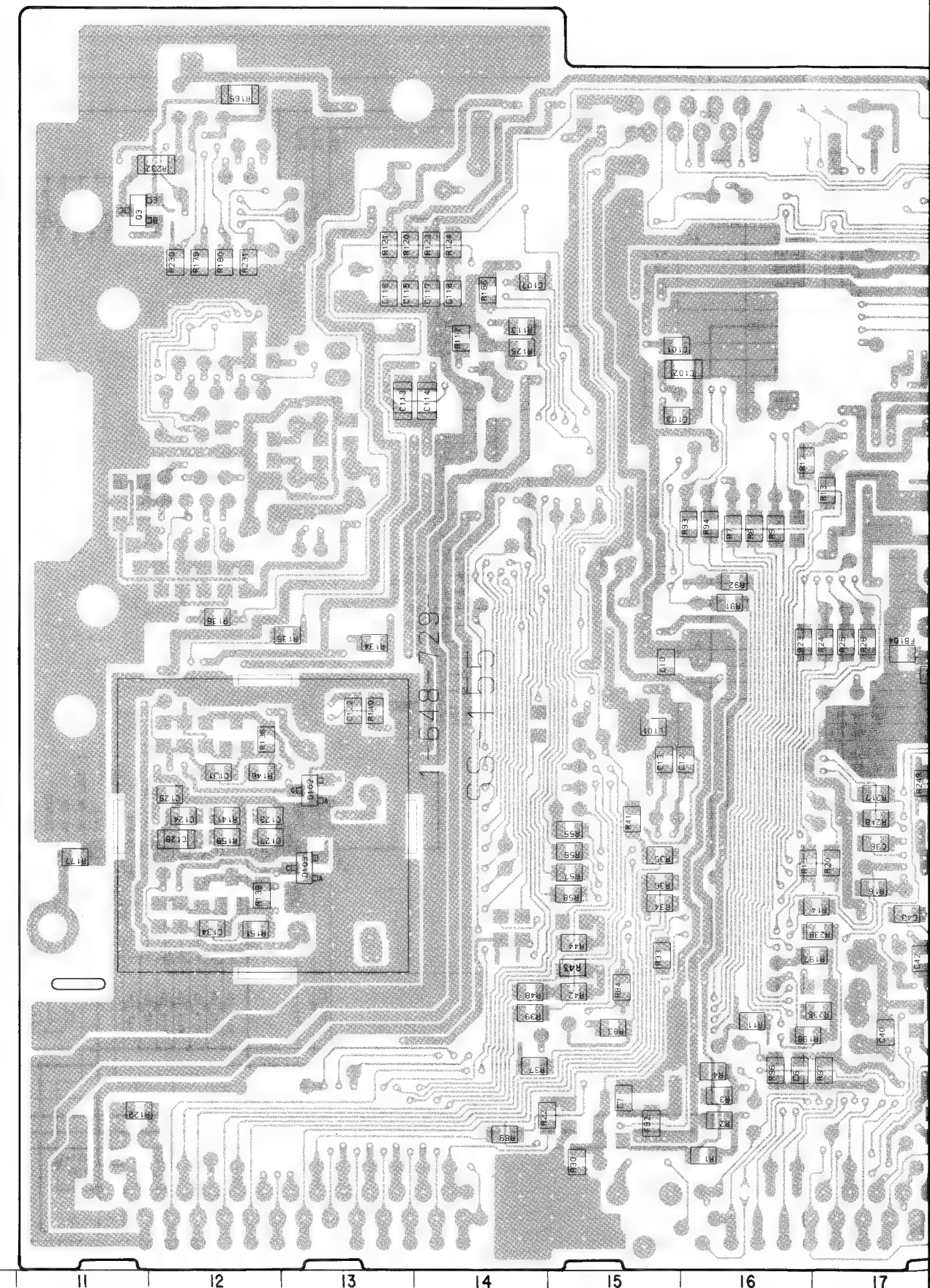
	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC	➡	➡➡	➡➡➡	➡
PB	➡	➡➡	➡➡➡	➡

• Signal path

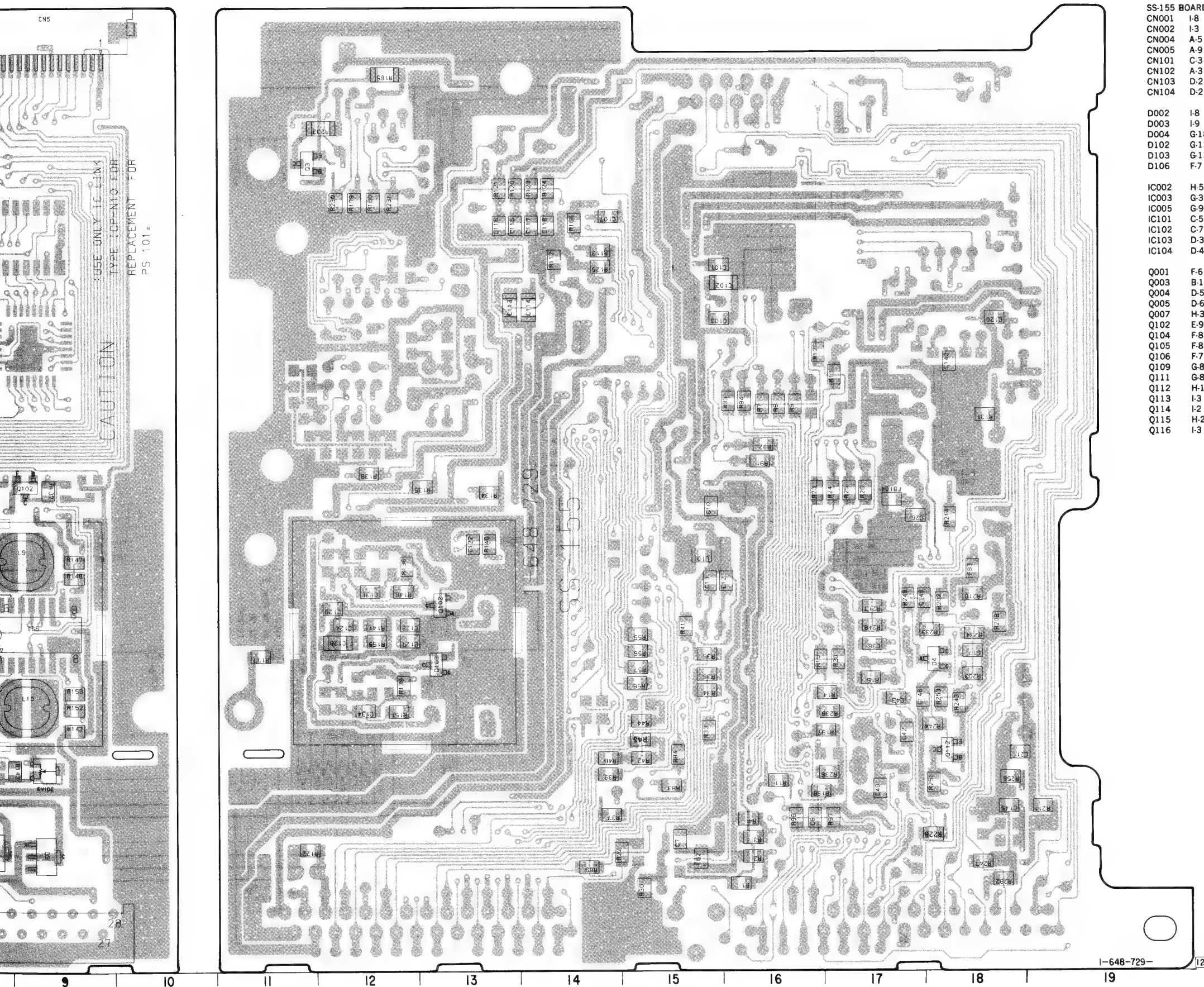
	REC	REC/PB	PB
Drum speed servo		➡	
Drum phase servo		➡➡	
Drum servo(speed and phase)		➡➡➡	
Capstan speed servo		➡	
Capstan phase servo	➡➡	➡➡	➡➡➡
Capstan servo(speed and phase)		➡➡➡	
Ref.signal	➡➡	➡➡	➡➡➡

Note: The components identified by mark or dotted line with mark are critical for safety. Replace only with part number specified.

SS-155 BOARD(CONDUCTOR SIDE)



SS-155 BOARD(CONDUCTOR SIDE)

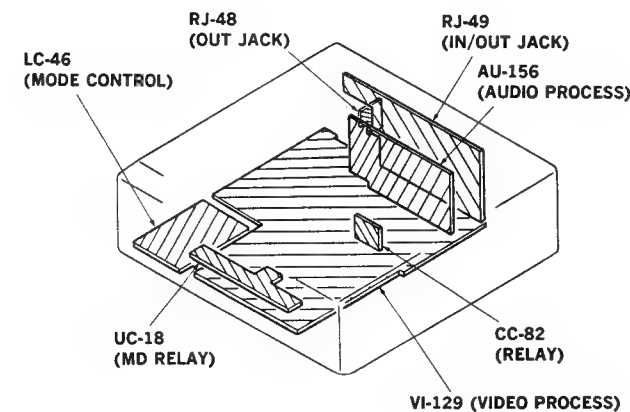
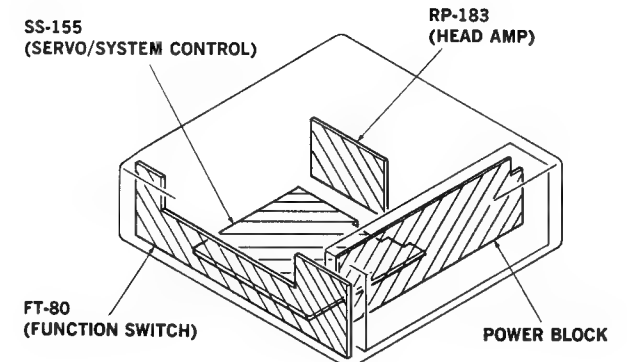


SS-155 BOARD
CN001 I-8
CN002 I-3
CN004 A-5
CN005 A-9
CN101 C-3
CN102 A-3
CN103 D-2
CN104 D-2

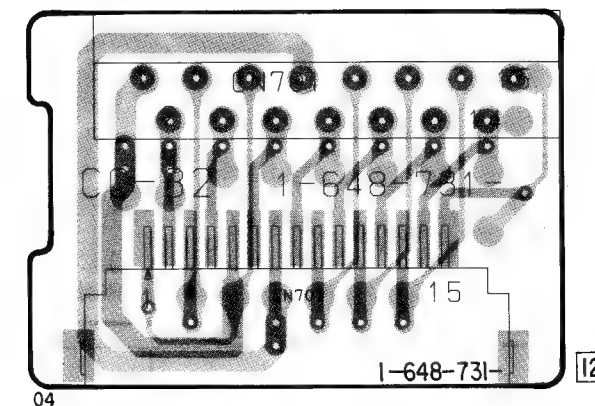
D002 I-8
D003 I-9
D004 G-18
D102 G-13
D103 G-13
D106 F-7

IC002 H-5
IC003 G-3
IC005 G-9
IC101 C-5
IC102 C-7
IC103 D-3
IC104 D-4

Q001 F-6
Q003 B-11
Q004 D-5
Q005 D-6
Q007 H-3
Q102 E-9
Q104 F-8
Q105 F-8
Q106 F-7
Q109 G-8
Q111 G-8
Q112 H-18
Q113 I-3
Q114 I-2
Q115 H-2
Q116 I-3



CC-82 BOARD

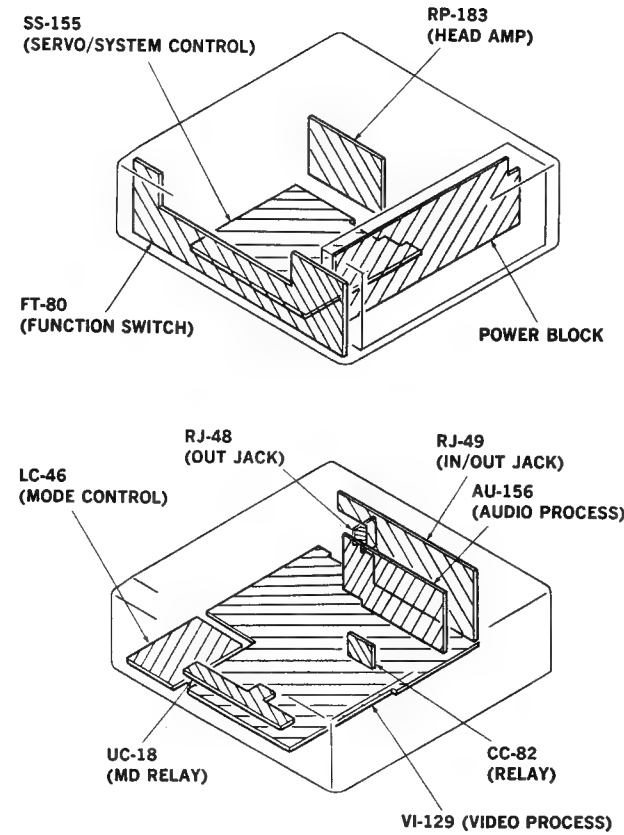


001 I-8
002 I-3
003 A-5
004 A-9
005 C-3
006 A-3
007 D-2
008 D-2

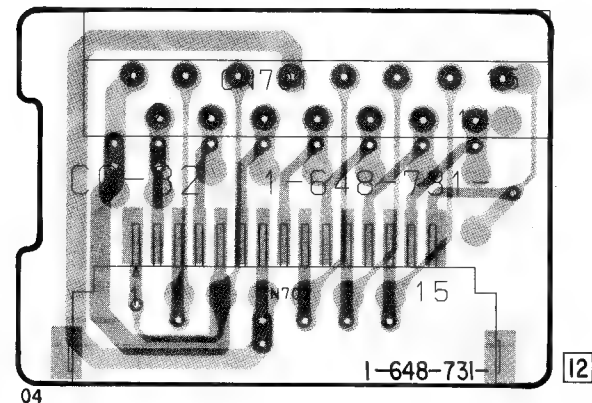
002 I-8
003 I-9
004 G-18
005 G-13
006 G-13
007 F-7

002 H-5
003 G-3
004 G-9
005 C-5
006 C-7
007 D-3
008 D-4

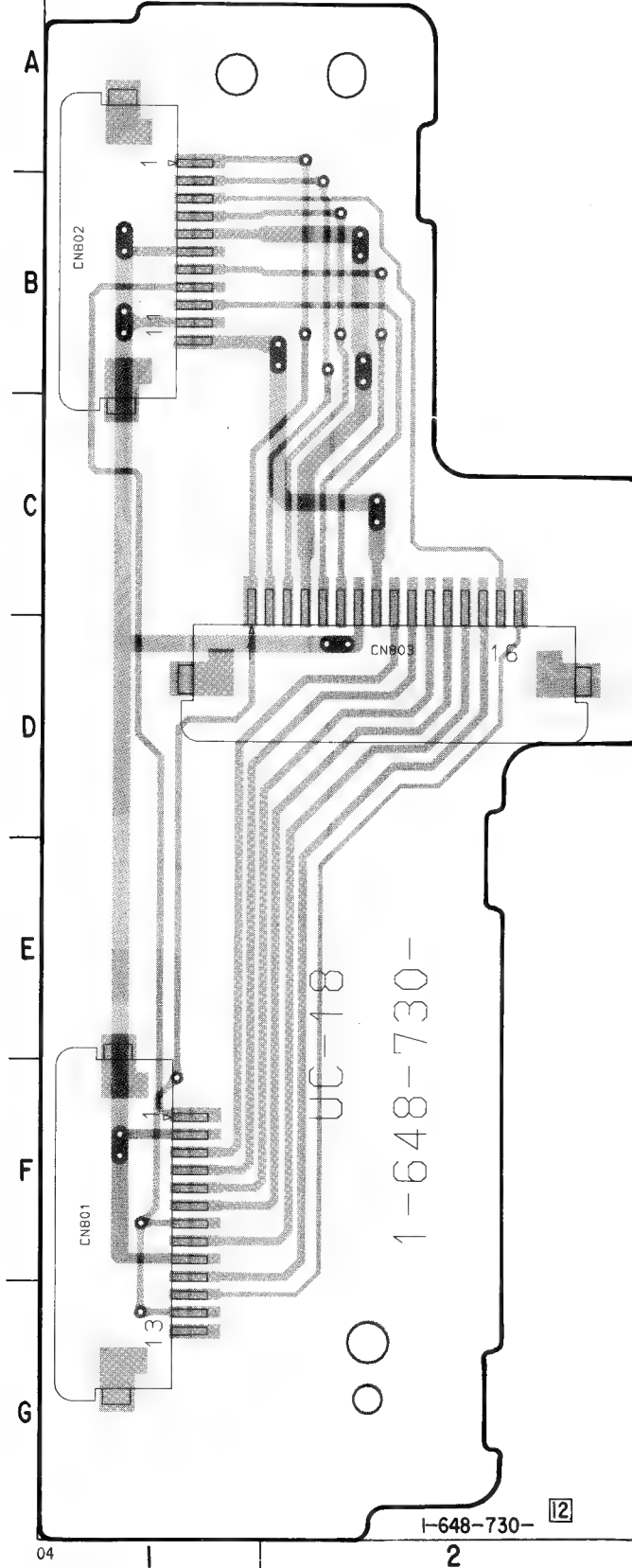
001 F-6
002 B-11
003 D-5
004 D-6
005 H-3
006 E-9
007 F-8
008 F-8
009 F-7
010 G-8
011 G-8
012 H-18
013 I-3
014 I-2
015 H-2
016 I-3



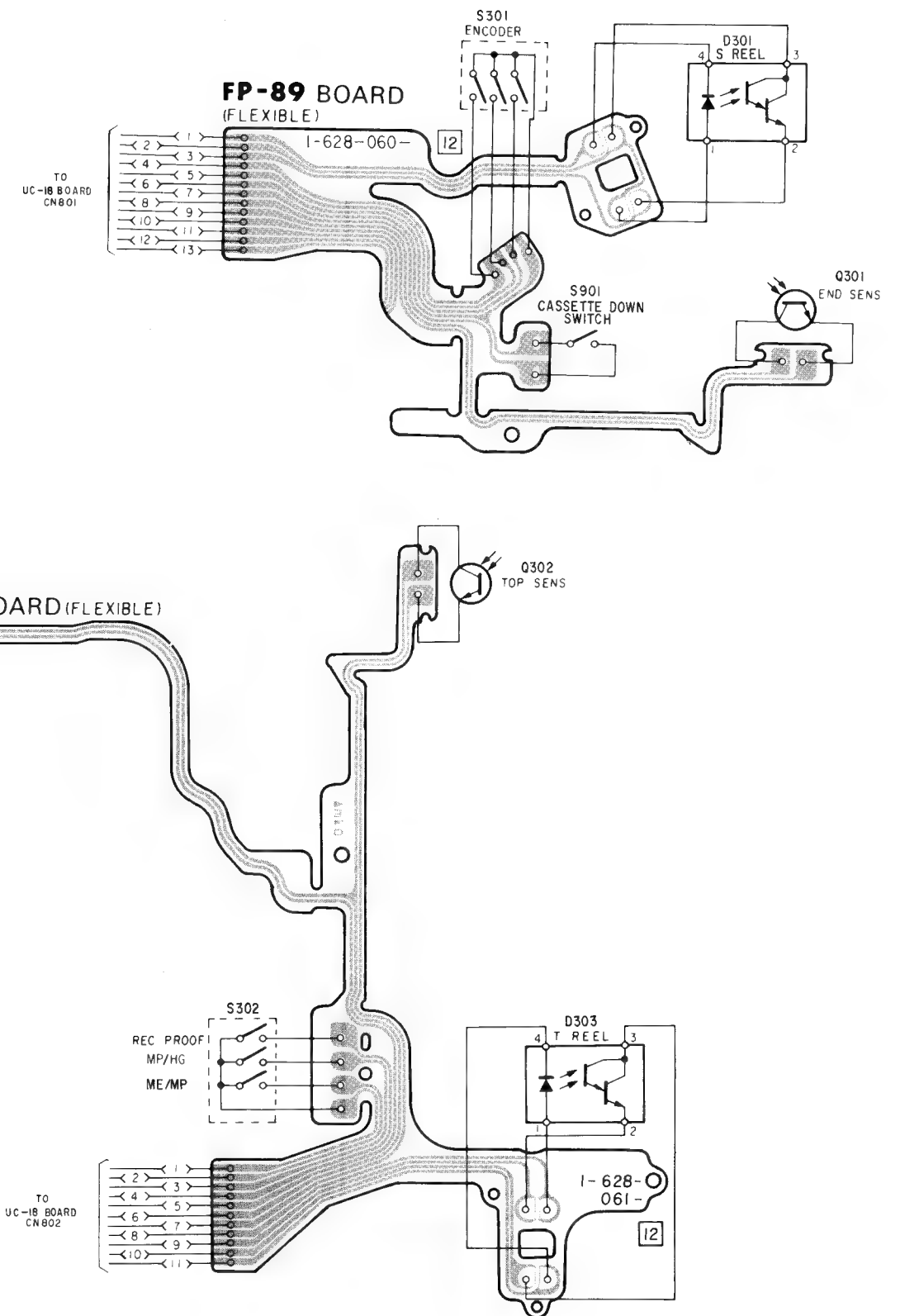
CC-82 BOARD



UC-18 BOARD



• : Pattern of the rear side.

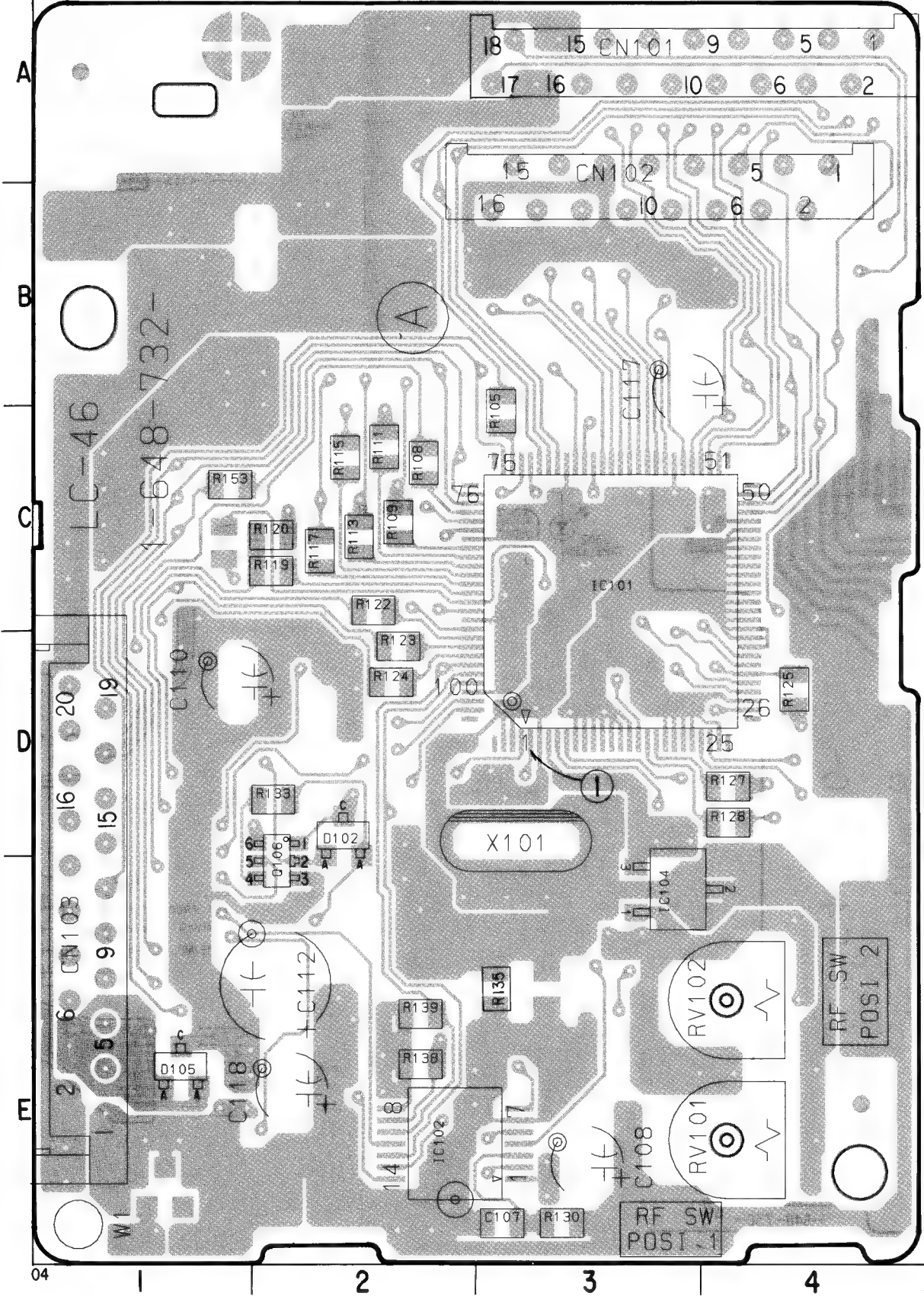


LC-46 (MODE CONTROL) PRINTED WIRING BOARD
—Ref. No. LC-46 BOARD : 3000 series—

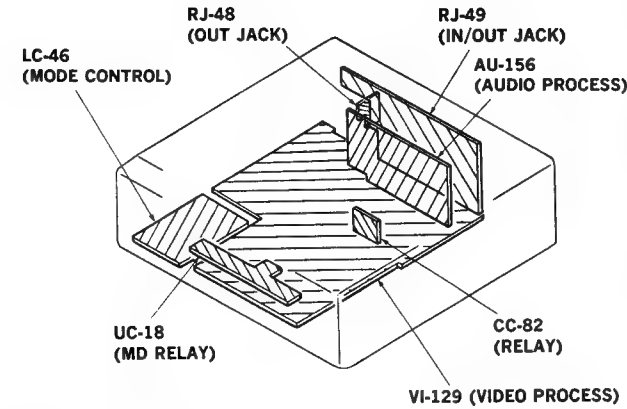
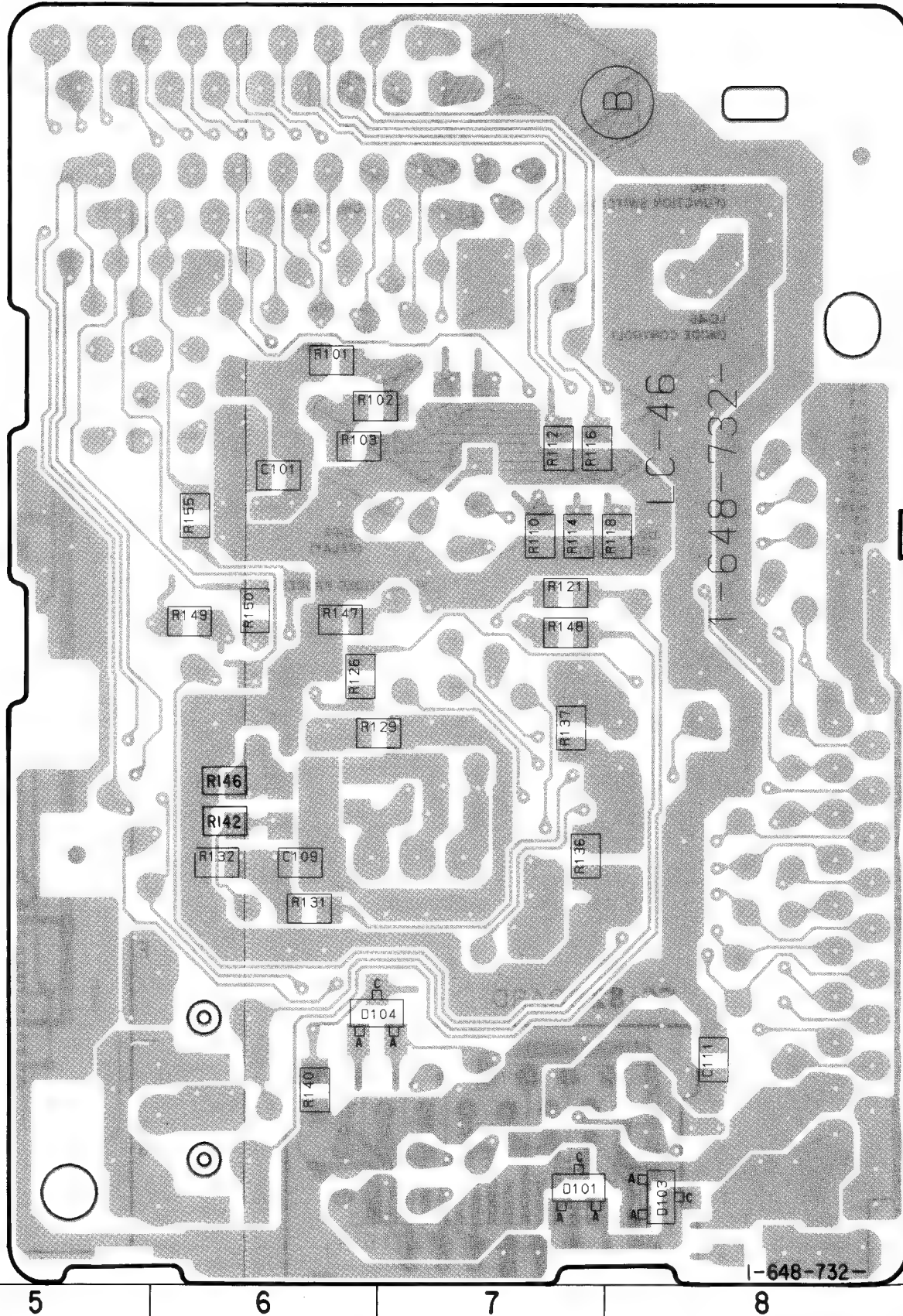
LC-46 BOARD

CN101	A-3
CN102	B-3
CN103	E-1
D101	F-7
D102	D-2
D103	F-8
D104	E-6
D105	F-1
IC101	C-3
IC102	F-2
IC104	E-3
Q106	E-2

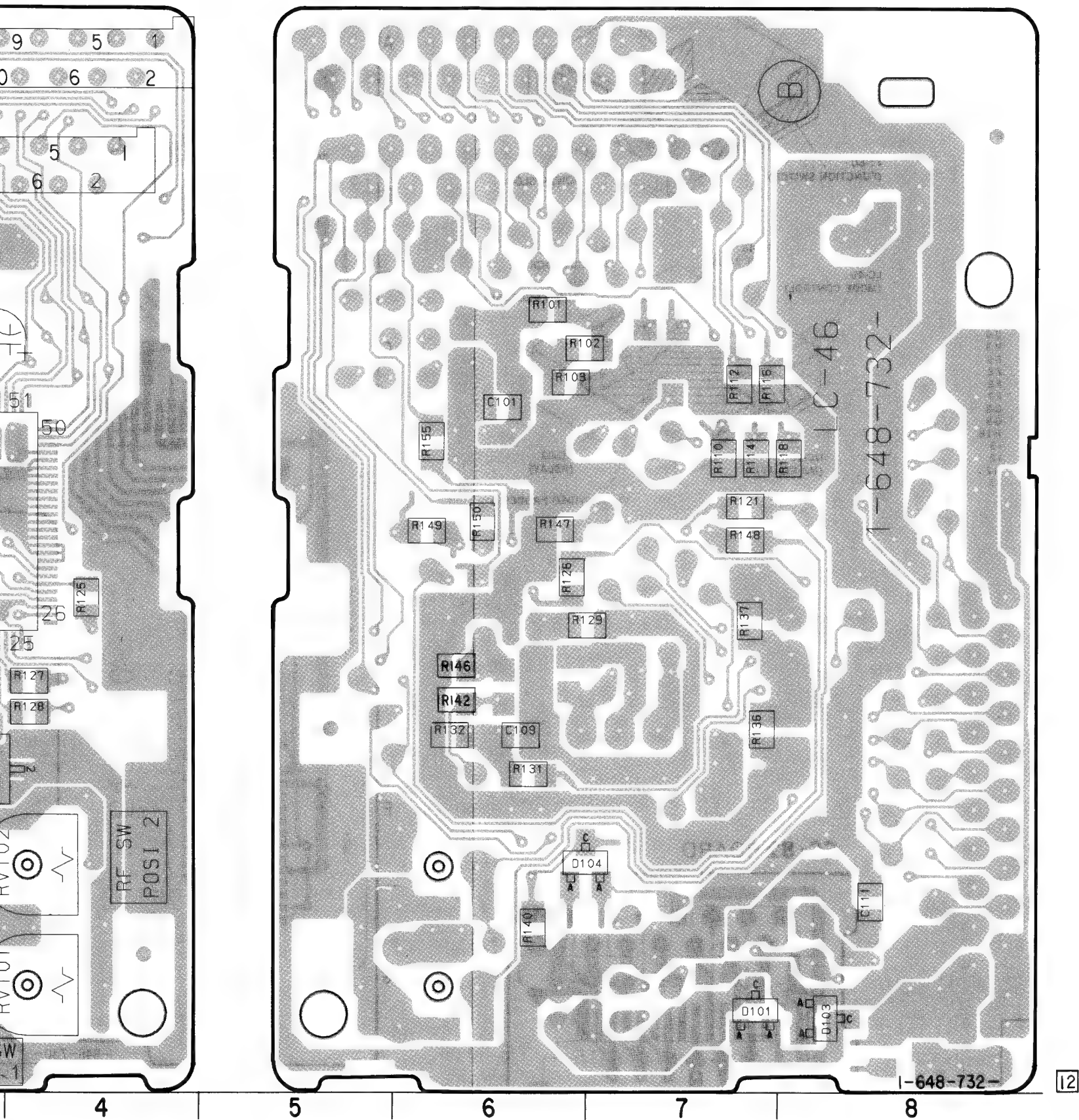
LC-46 BOARD (COMPONENT SIDE)



LC-46 BOARD (CONDUCTOR SIDE)

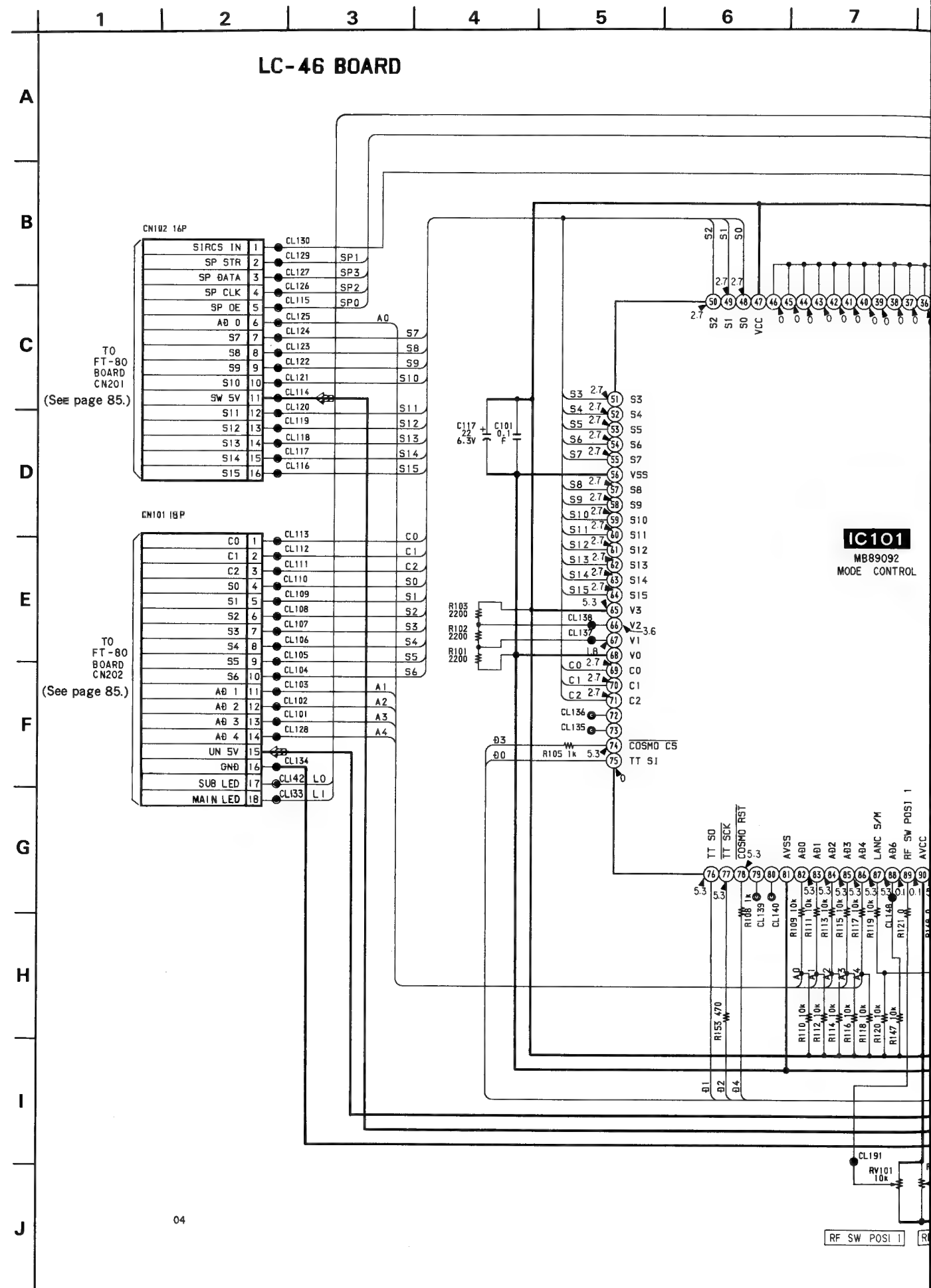


LC-46 BOARD(CONDUCTOR SIDE)

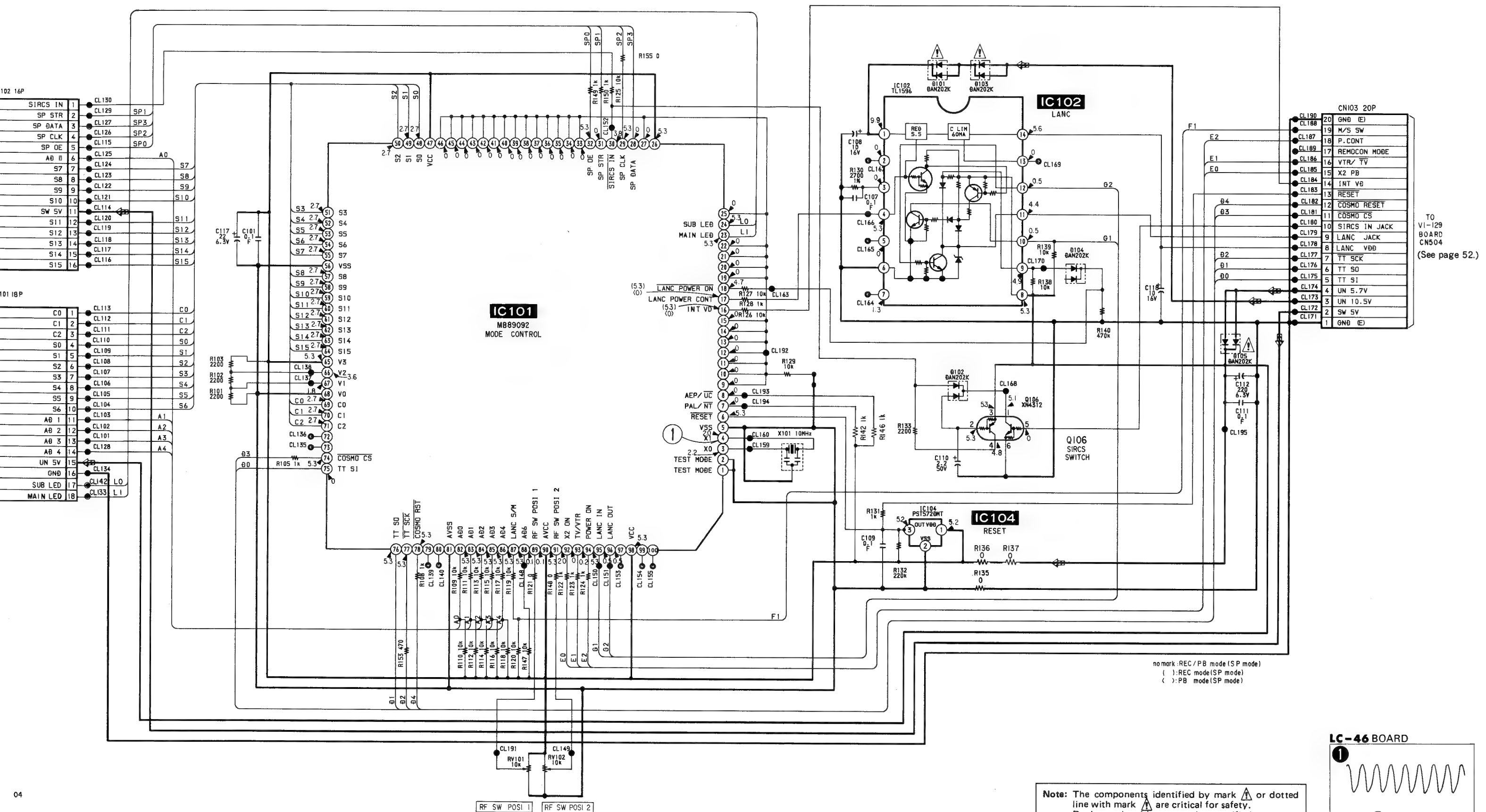


LC-46 (MODE CONTROL) SCHEMATIC DIAGRAM

—Ref. No. LC-46 BOARD: 3000 series—



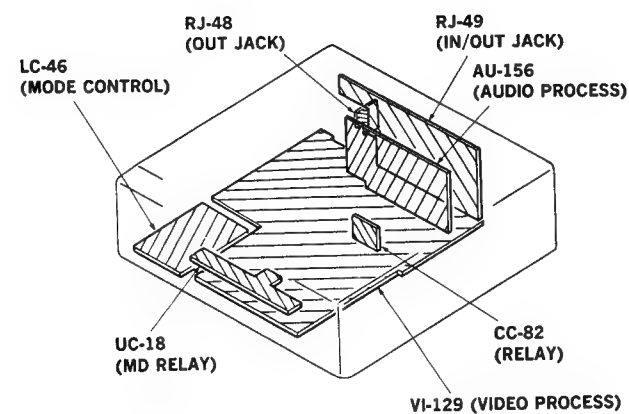
LC-46 BOARD

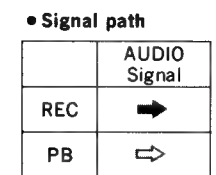


TO
VI-129
BOARD
CN504
(See page 52.)

—Ref. No. AU-156 BOARD: 4000 series—

—Ref. No. AU-156

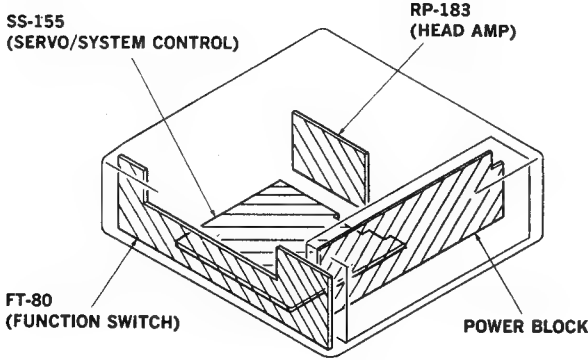
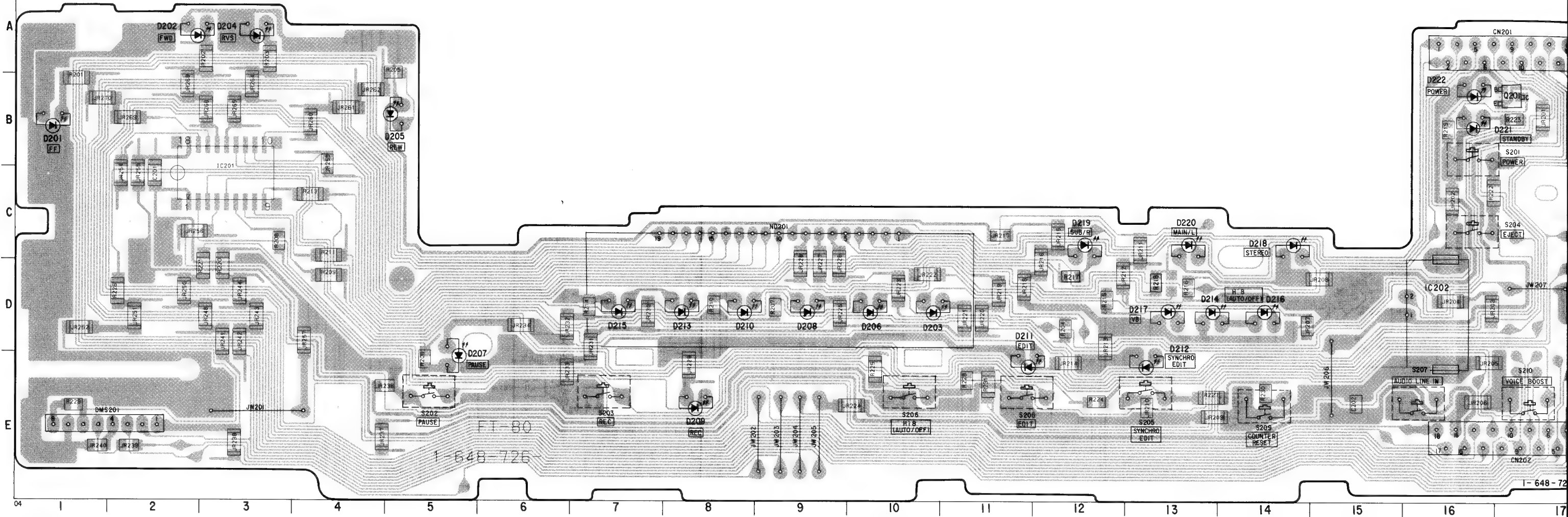




FT-80 (FUNCTION SWITCH) PRINTED WIRING BOARD

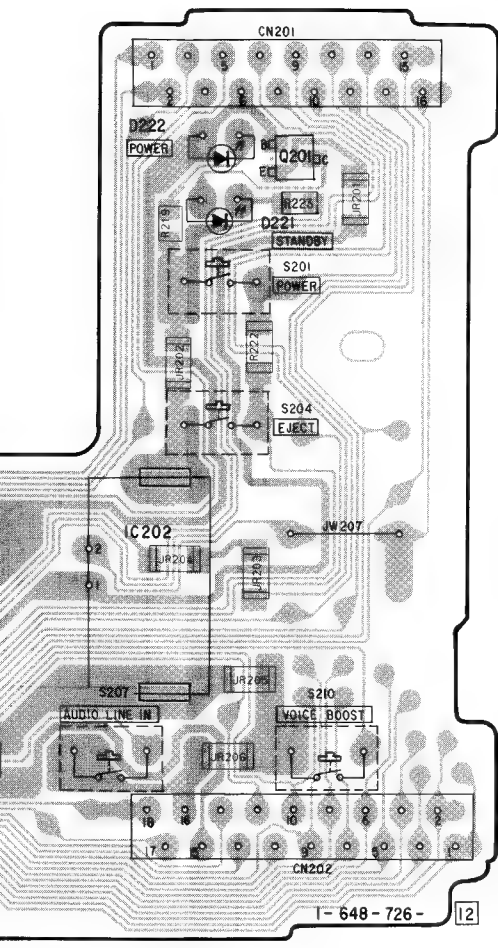
—Ref. No. FT-80 BOARD: 5000 series—

FT-80 BOARD



FT-80 (FUNCTION SWITCH) SCHEMATIC DIAGRAM

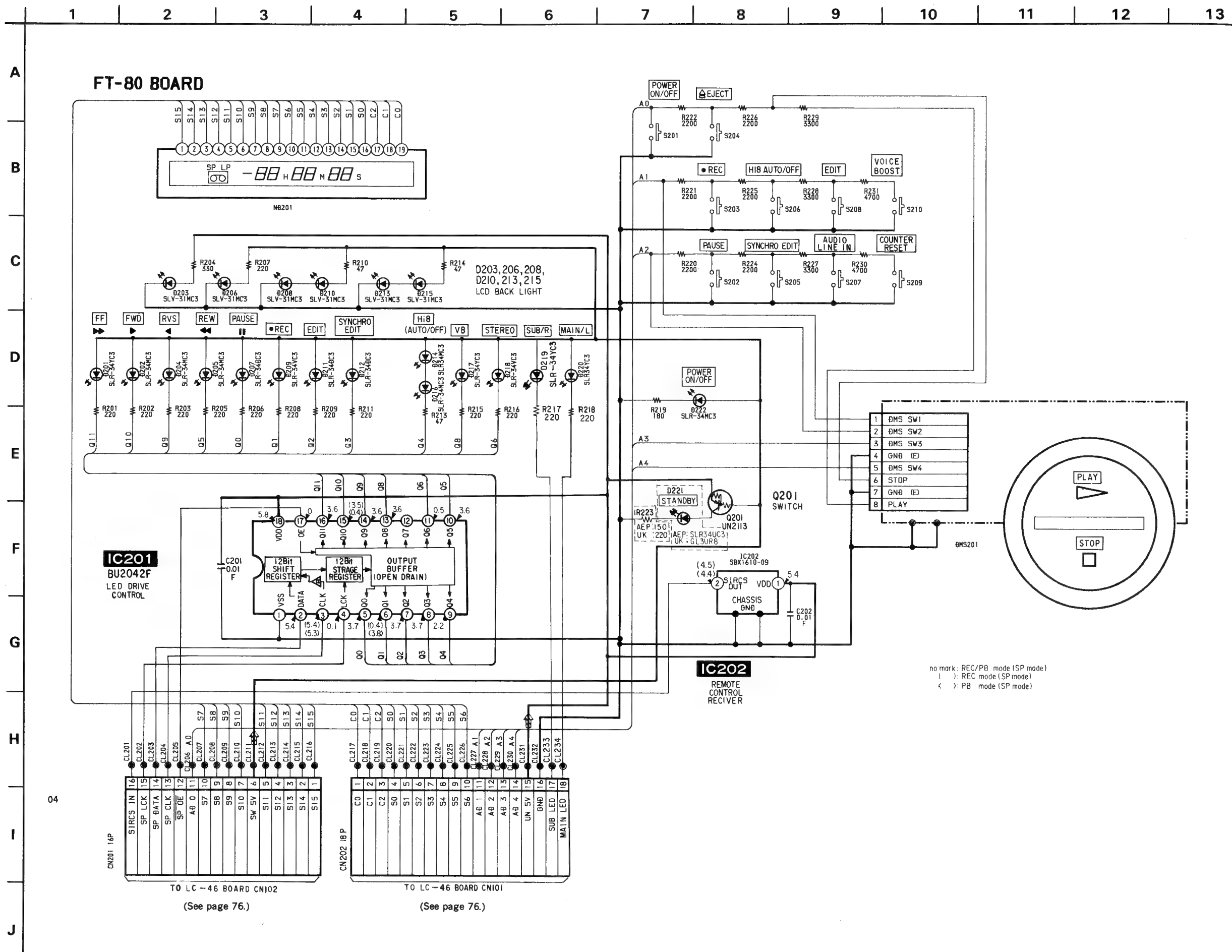
—Ref. No. FT-80 BOARD: 5000 series—



FT-80 BOARD
CN201 A-17
CN202 E-17

D201 B-1
D202 A-2
D203 D-10
D204 A-3
D205 B-5
D206 D-10
D207 E-15
D208 D-9
D209 E-8
D210 D-8
D211 D-11
D212 D-13
D213 D-8
D214 D-13
D215 D-7
D216 D-14
D217 D-13
D218 C-14
D219 C-12
D220 C-13
D221 B-17
D222 B-16

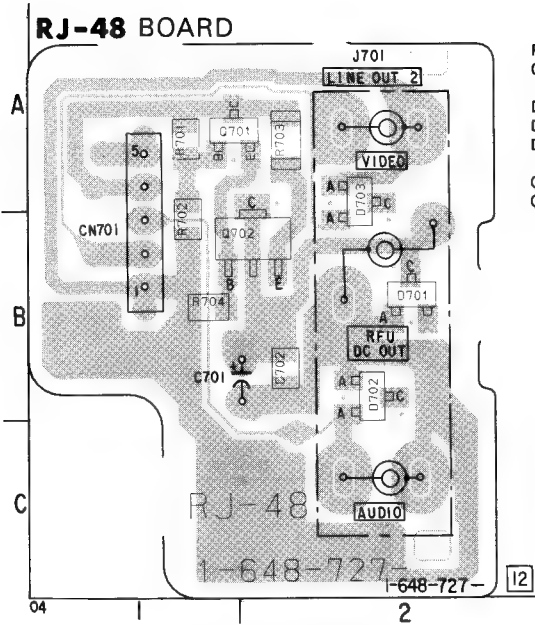
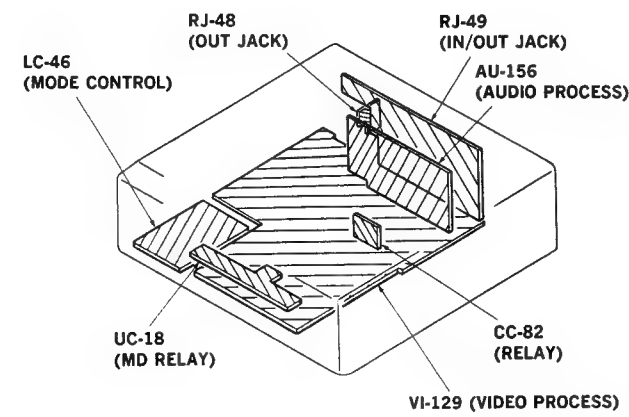
IC201 C-3
IC202 D-16



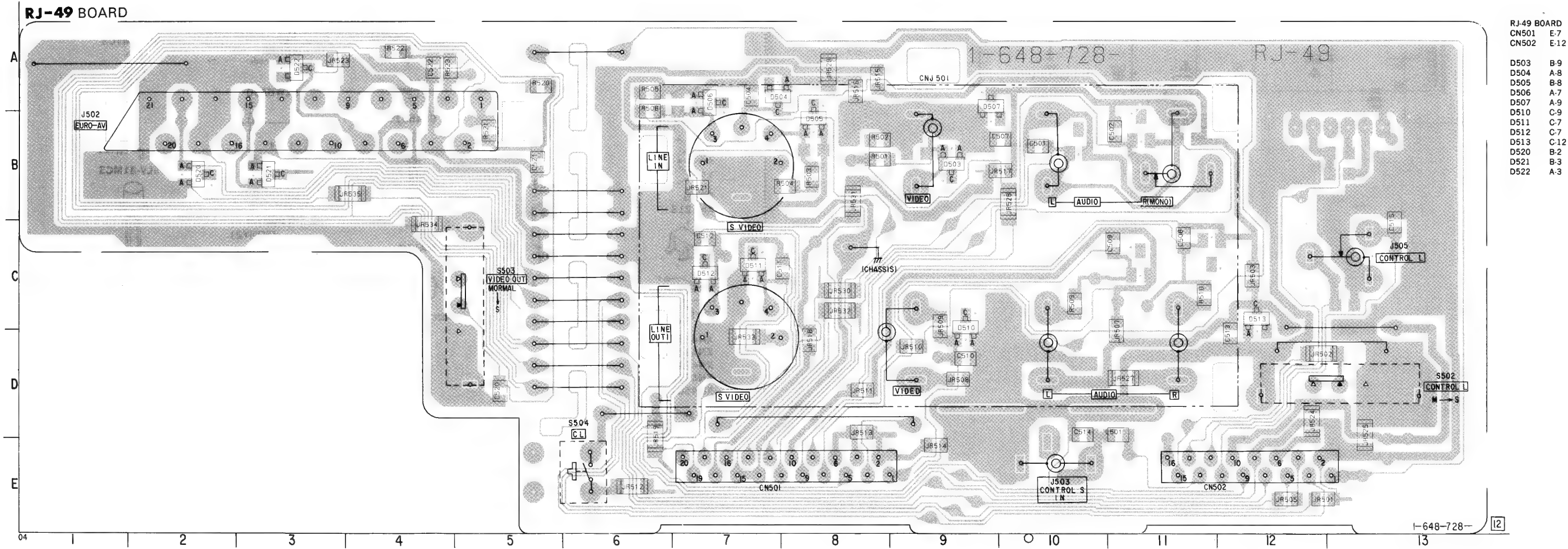
04

RJ-48 (OUT JACK), RJ-49 (IN/OUT JACK) PRINTED WIRING BOARDS

—Ref. No. RJ-48 and RJ-49 BOARDS: 5000 series—

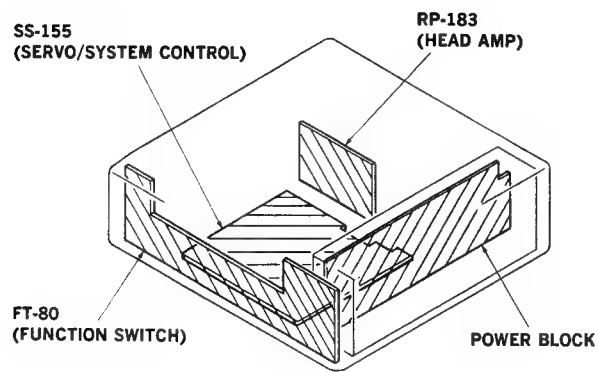
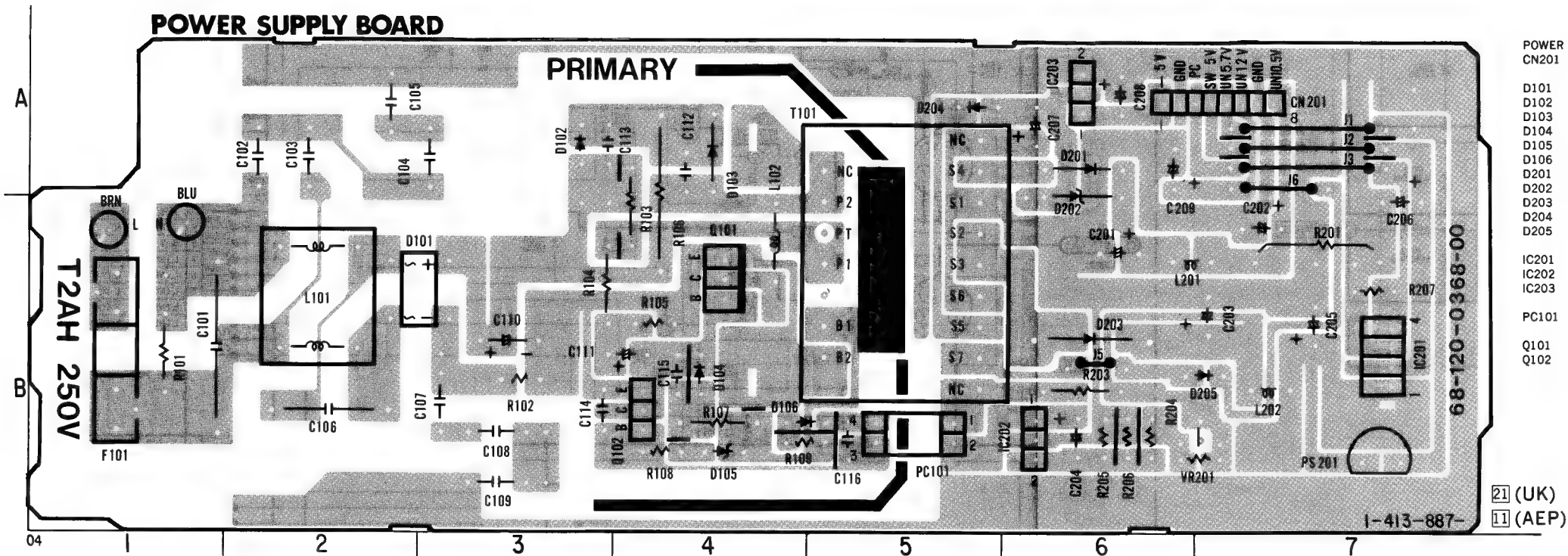


RJ-48 BOARD	
CN701	B-1
D701	B-2
D702	B-2
D703	A-2
Q701	A-1
Q702	B-2

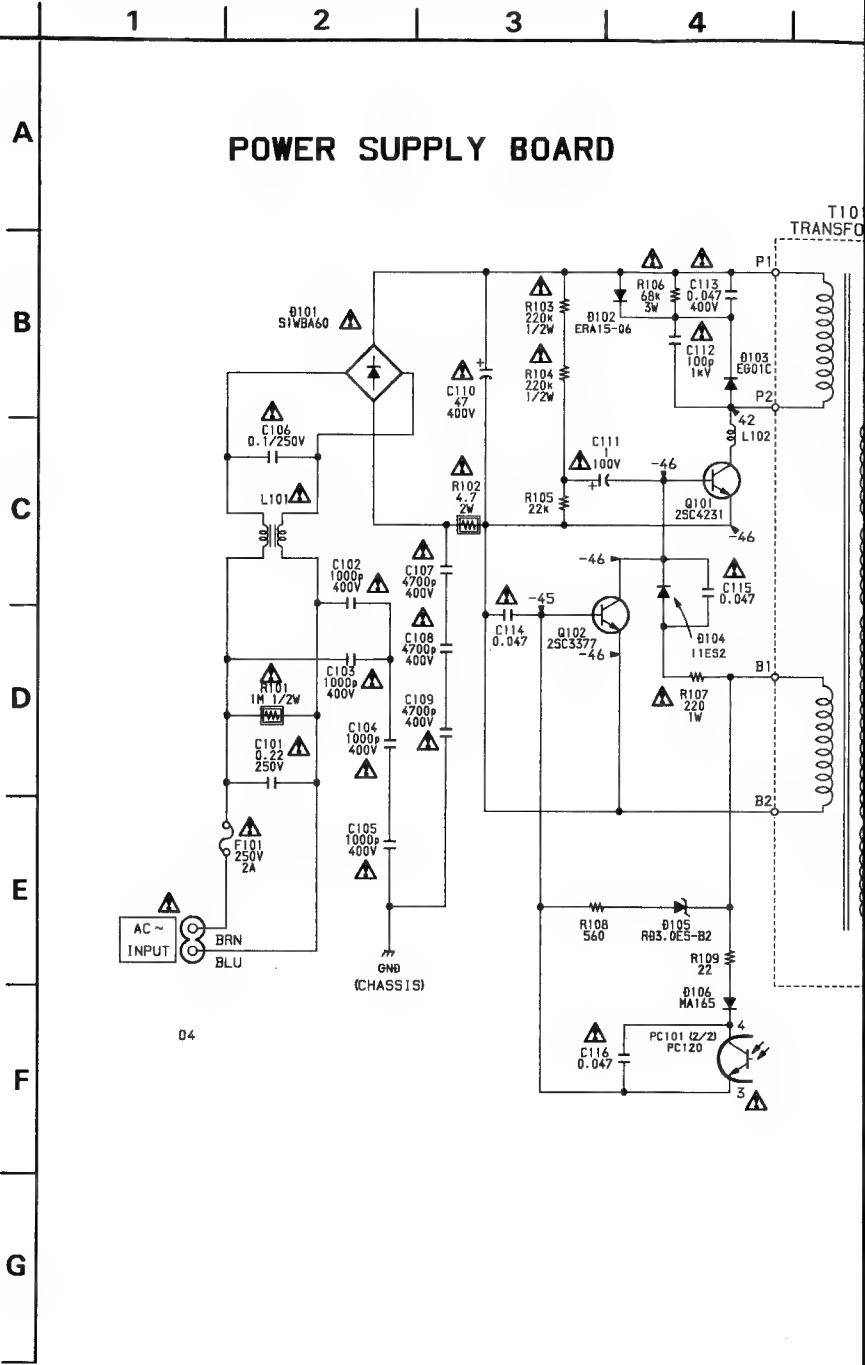


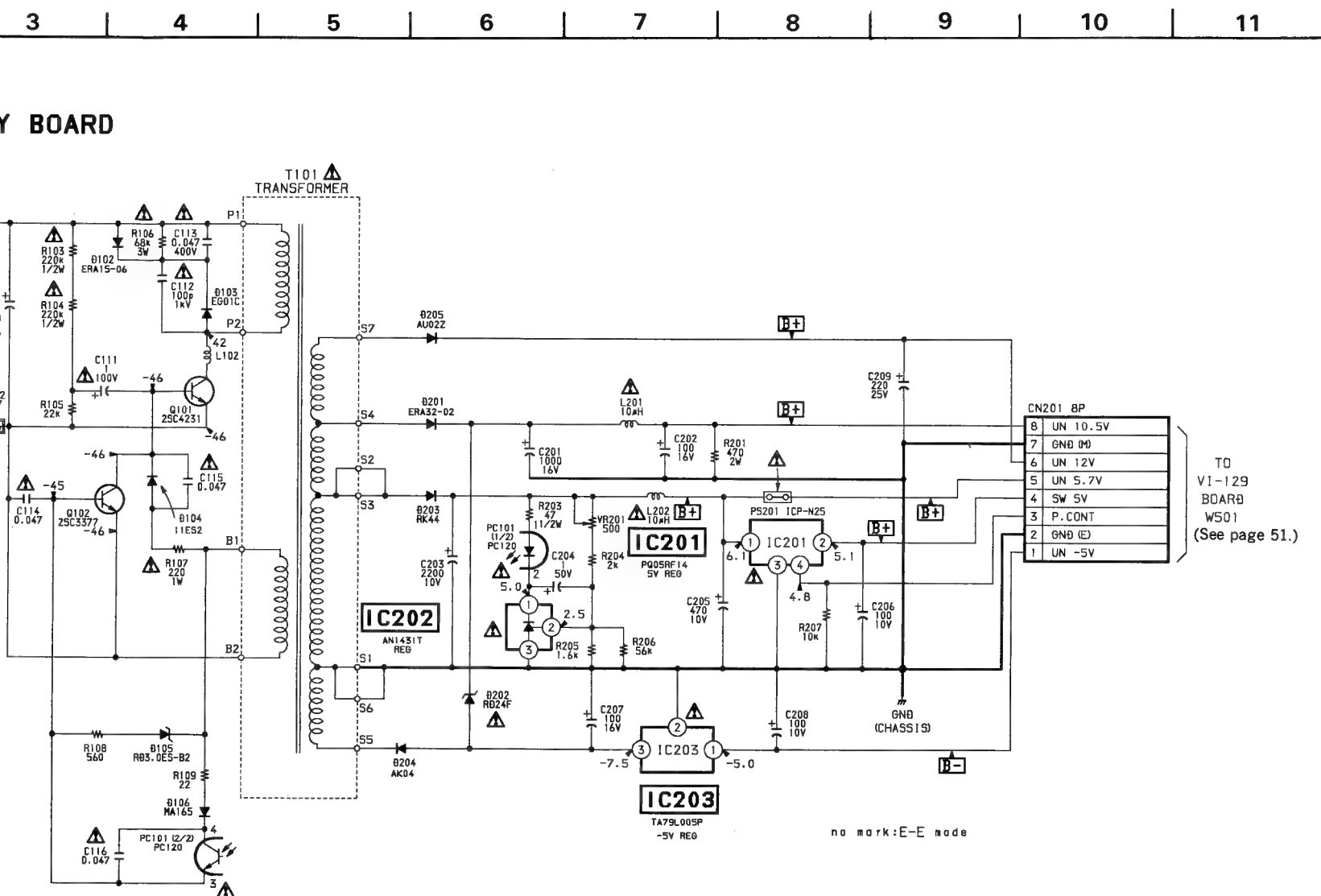
RJ-49 BOARD	
CN501	E-7
CN502	E-12
D503	B-9
D504	A-8
D505	B-8
D506	A-7
D507	A-9
D510	C-9
D511	C-7
D512	C-7
D513	C-12
D520	B-2
D521	B-3
D522	A-3

POWER SUPPLY (POWER) PRINTED WIRING BOARD
—Ref. No. POWER SUPPLY BOARD: 6000 series—



POWER SUPPLY (POWER) SCHEMATIC DIAGRAM
—Ref. No. POWER SUPPLY BOARD: 6000 series—



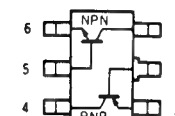


Note: The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

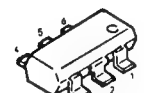
5-3. SEMICONDUCTORS

DTA114EK
DTA143EK
DTA144EK
DTC144EK
UN2116
UN2210
UN2213
2SA1162-G
2SB709A-Q
2SC1623-L5L6
2SC2223-F13
2SC3326N
2SD601A-Q
2SD1757K-RS

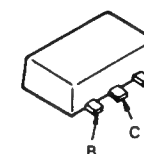
XN4312
XN4601



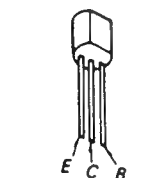
XN6501



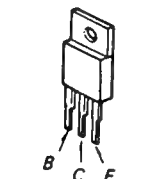
2SB798-DL
2SB1121



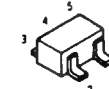
2SC2001-LK



2SC4231



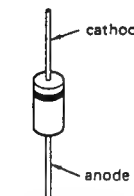
FMW1
XN1213



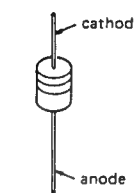
XN4210
XN4212
XN4213
XN4215
XN4501



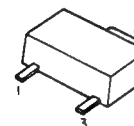
AK04-V2
EG01
ERA32-02
RD24F-B2
RK44



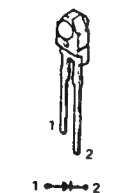
AU02Z
RD3.0ES-B2
1SS120
11ES2



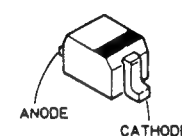
E10DS2



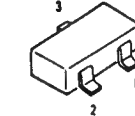
GL453JS



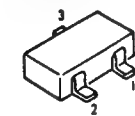
MA110



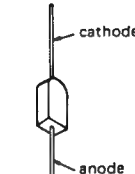
MA152WK
MA3130WA-TX



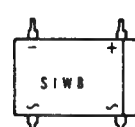
RD5.6M-B1
RD5.6M-B2
RD9.1M-B1
SB05-05CP
1SS193



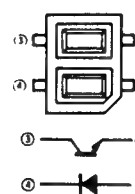
RM11C



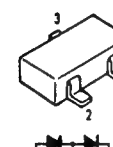
S1WBA60



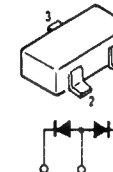
TLP907-0
(SONY2)



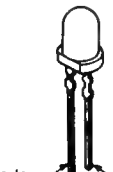
1SS226



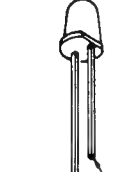
1S2836



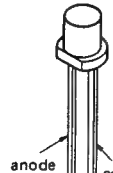
SLR-34DC3



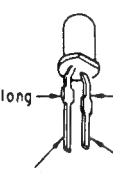
SLR-34MC3
SLR-34VC3



SLV-31MC3



TLY123



SECTION 6 EXPLODED VIEWS

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- -XX and -X mean standardized parts, so they may have some difference from the original one.

- Color Indication of Appearance Parts

Example :

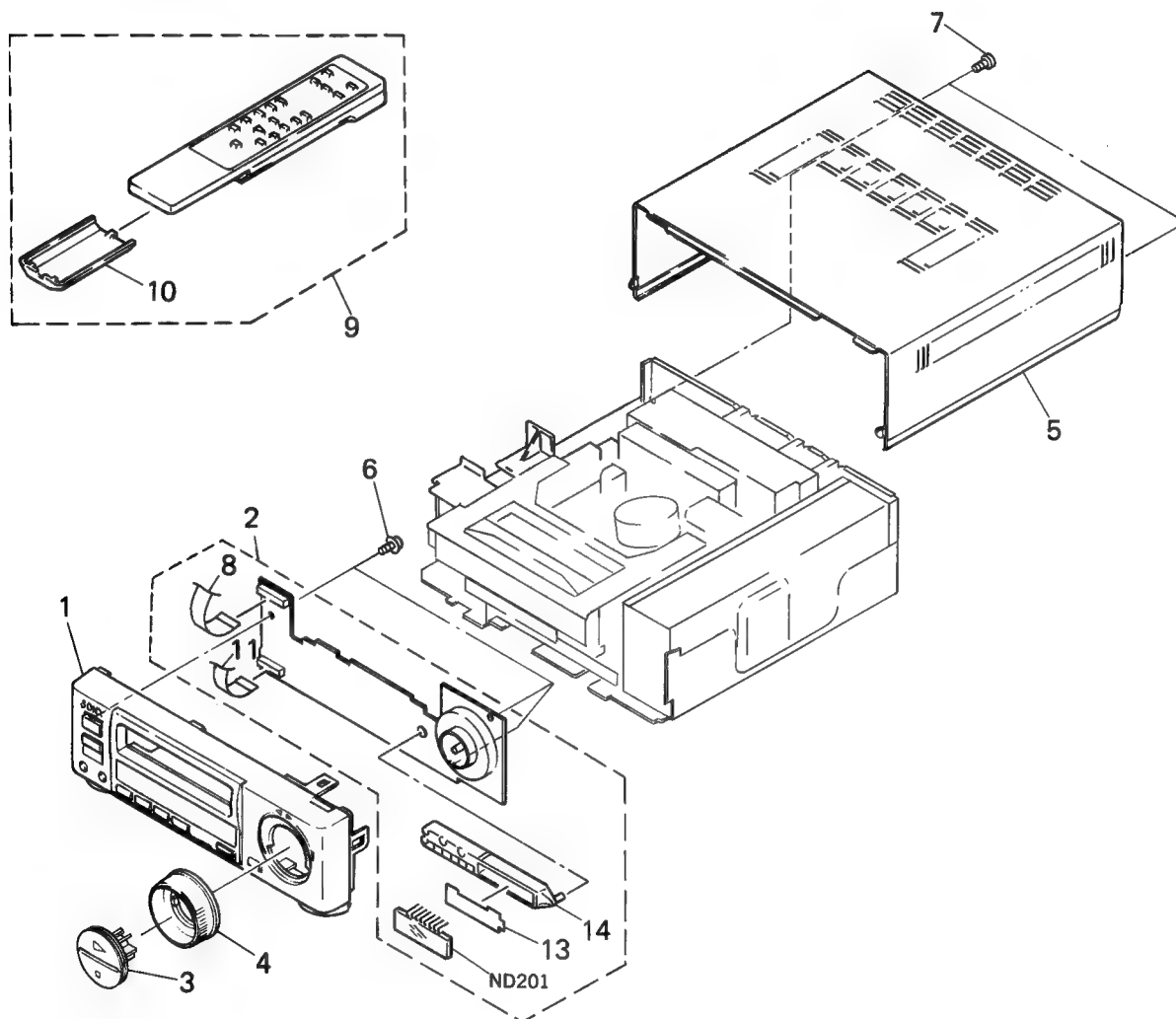
KNOB, BALANCE (WHITE)... (RED)

↑ ↑
 Parts Color Cabinet's Color

- Hardware (# mark) list is given in the last of this parts list.

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

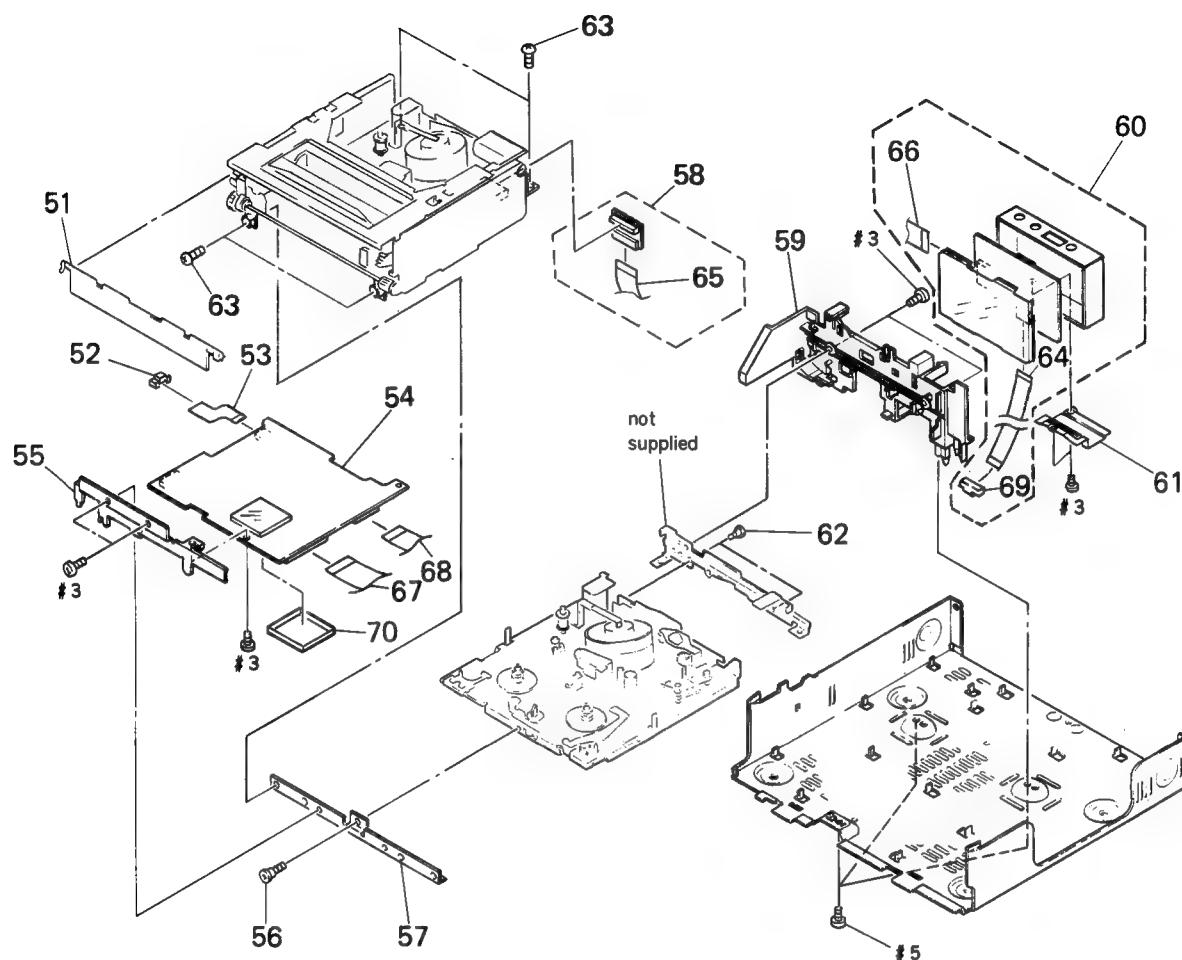
6-1. FRONT PANEL AND CASE ASSEMBLIES



Ref. No.	Part No.	Description	Remark
1	X-3943-322-1	PANEL ASSY, FRONT	
* 2	A-7053-731-A	FT-80 (B) BOARD, COMPLETE (AEP)	
* 2	A-7053-854-A	FT-80 (C) BOARD, COMPLETE (UK)	
3	X-3943-039-1	BUTTON ASSY, FUNCTION	
4	3-947-284-21	RING, SHUTTLE	
* 5	3-947-291-41	CASE, UPPER	
6	3-669-480-21	+ PTPWH 2	
7	3-948-500-01	SCREW, BV (3X10) RING	

Ref. No.	Part No.	Description	Remark
8	1-751-367-11	CABLE, FLAT (FFT-9) 16P	
9	1-467-302-11	REMOTE COMMANDER (RMT-V124C)	
10	2-181-754-01	COVER, BATTERY	
11	1-696-411-11	CABLE, FLAT (FFT-8) 18P	
* 13	3-948-365-01	ILLUMINATOR (CX)	
* 14	3-948-364-01	HOLDER (CX), INDICATION TUBE	
ND201	1-809-727-11	DISPLAY PANEL, LIQUID CRYSTAL	

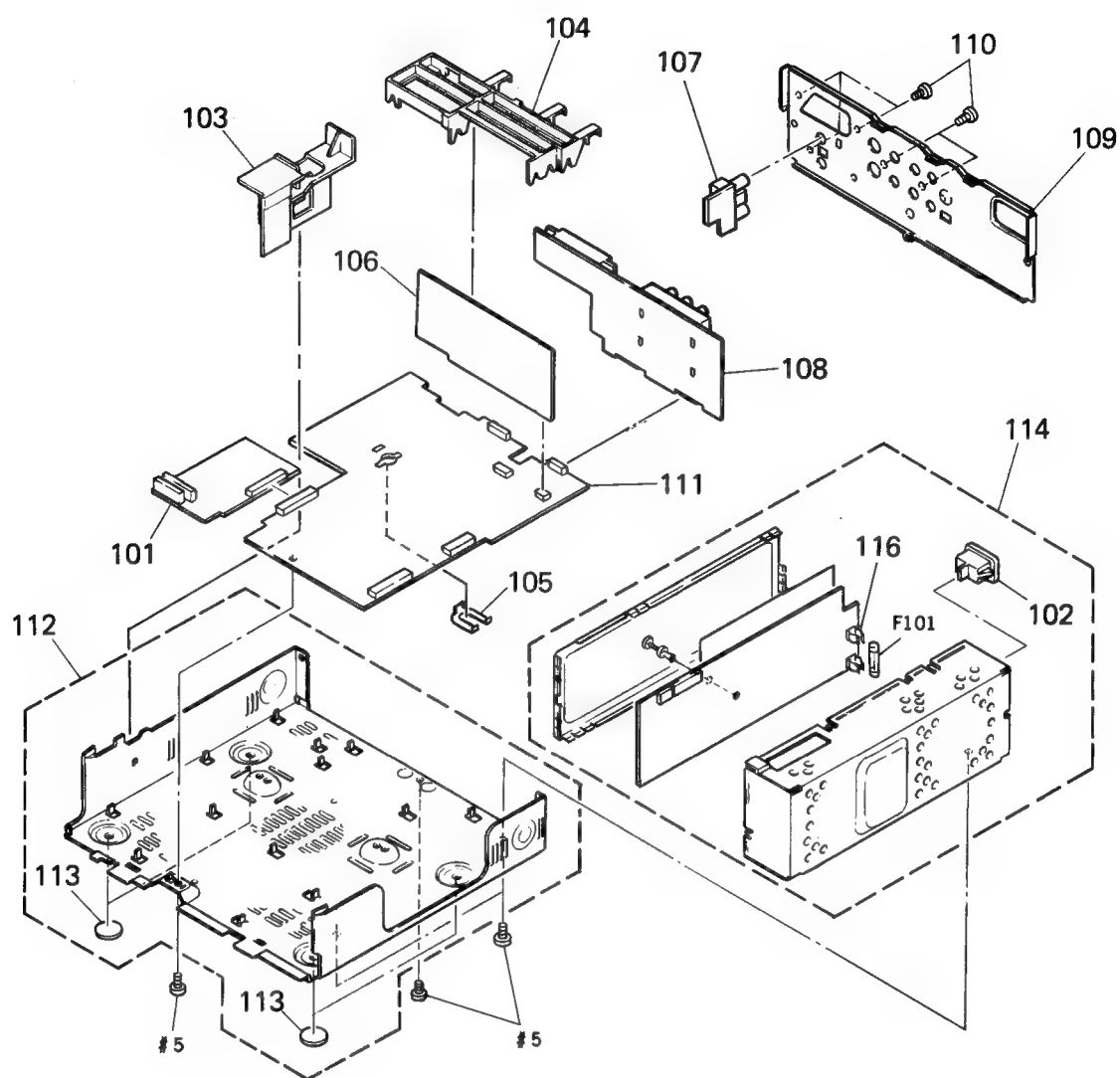
6-2. CHASSIS FRAME ASSEMBLY



Ref. No.	Part No.	Description	Remark
51	3-953-726-11	WINDOW, CASSETTE COMPARTMENT	
52	1-569-346-11	CONNECTOR, FPC (TRANSLATION) 10P	
53	1-643-189-11	FP-503 FLEXIBLE BOARD	
* 54	A-7053-730-A	SS-155 (B) BOARD, COMPLETE	
* 55	3-947-273-01	FRAME (FRONT), MD	
56	3-732-816-21	SCREW, STEP	
* 57	3-732-810-02	BRACKET (FRONT)	
* 58	A-7063-829-A	CC-82 (B) BOARD, COMPLETE	
59	3-947-275-03	FRAME, RP	
* 60	A-7063-728-A	RP-183 (A) BOARD, COMPLETE	

Ref. No.	Part No.	Description	Remark
* 61	3-947-276-01	PLATE (MD), GROUND	
62	3-732-816-01	SCREW, STEP	
63	3-732-817-01	SCREW (2X4.5), TAPPING	
64	1-751-375-11	OFP-37 FLEXIBLE BOARD	
65	1-751-009-11	CABLE, FLAT (FSC-4) 15P	
66	1-751-366-11	CABLE, FLAT (FRS-13) 10P	
67	1-696-605-11	CABLE, FLAT (FSV-7) 28P	
68	1-696-042-11	CABLE, FLAT (FSV-4) 13P	
69	1-569-347-11	CONNECTOR, FPC (TRANSLATION) 13P	
* 70	3-947-505-01	CASE, SHIELD, PWM	

6-3. MAIN BOARDS AND POWER BLOCK ASSEMBLIES

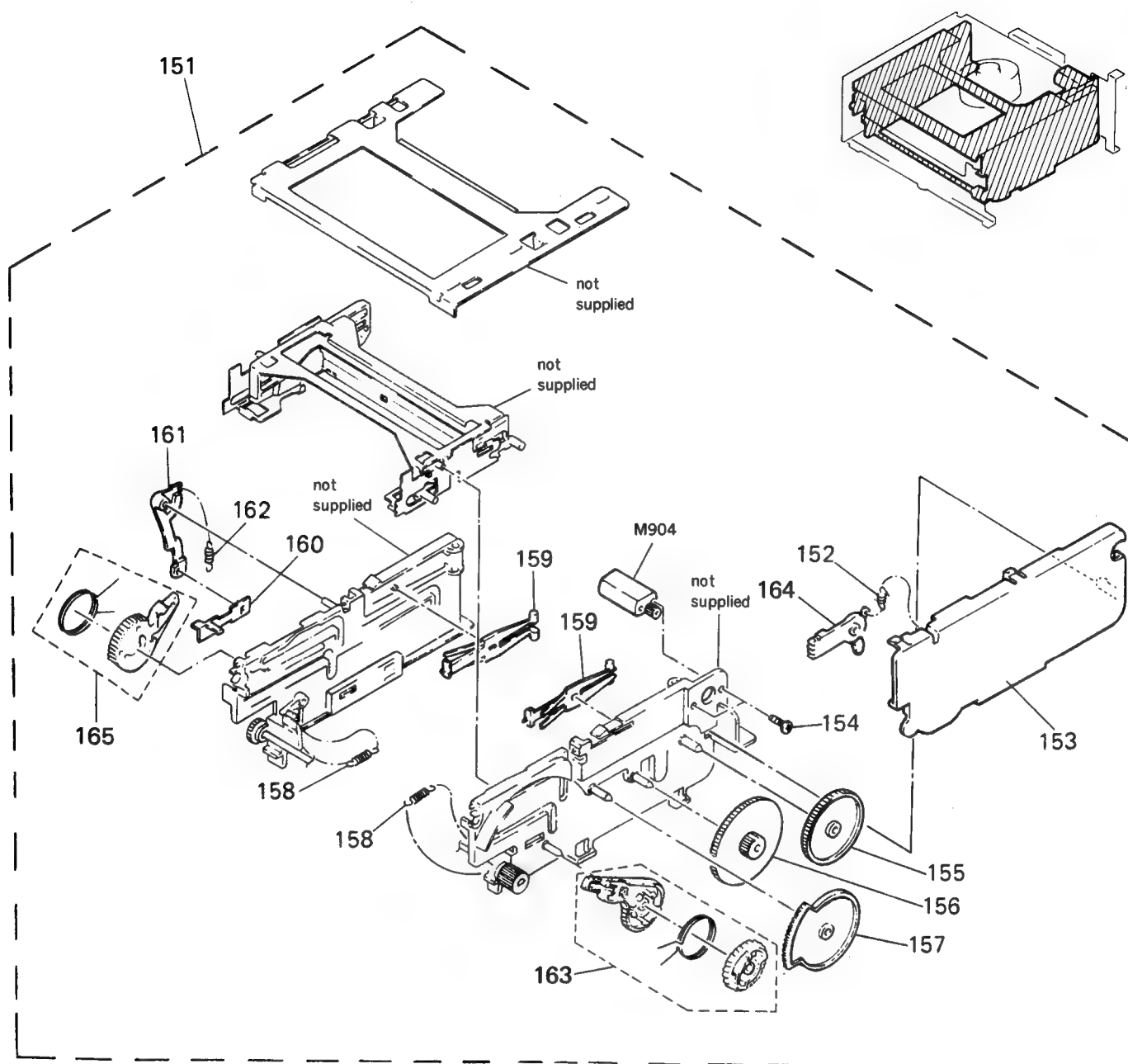


The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
* 101	A-7063-732-A	LC-46 (B) BOARD, COMPLETE	
⚠ 102	9-903-247-01	AC INLET 2P (250V/2.5A)	
103	3-947-283-01	HOLDER, MAC	
* 104	3-947-294-01	HOLDER, PC BOARD	
* 105	3-954-375-01	PLATE, GROUND, VI	
* 106	A-7063-736-A	AU-156 (B) BOARD, COMPLETE	
* 107	A-7063-735-A	RJ-48 (A) BOARD, COMPLETE	
* 108	A-7063-734-A	RJ-49 (B) BOARD, COMPLETE	

Ref. No.	Part No.	Description	Remark
* 109	3-954-373-11	FRAME, REAR	
110	3-948-500-01	SCREW, BV (3X10) RING	
* 111	A-7063-733-A	VI-129 (A) BOARD, COMPLETE	
* 112	X-3941-463-2	PLATE ASSY, BOTTOM	
113	3-940-657-01	FOOT (FELT)	
114	1-413-887-11	POWER BLOCK	
116	9-902-059-01	HOLDER, FUSE	
⚠ F101	9-903-925-01	FUSE, TIMER-LAG (250V/2A)	

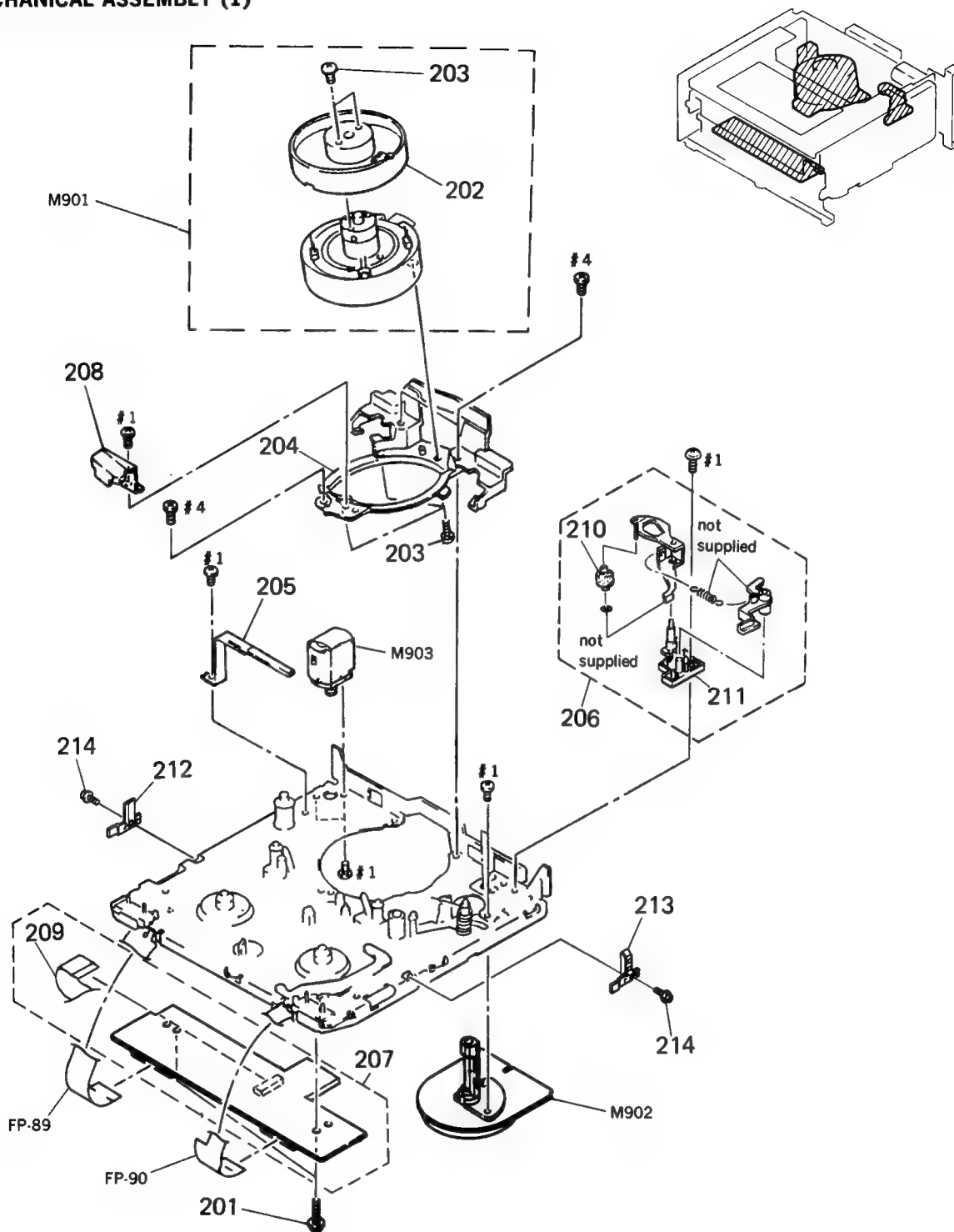
6-4. CASSETTE COMPARTMENT ASSEMBLY



Ref. No.	Part No.	Description	Remark
* 151	A-7091-647-D	CASSETTE COMPARTMENT ASSY, FL	
152	3-731-175-02	SPRING, TENSION	
153	3-732-804-03	COVER, GEAR	
154	3-730-141-01	SCREW (PSW) (2X4)	
155	3-731-182-01	GEAR (B), DECELERATION	
156	3-731-181-01	GEAR (A), DECELERATION	
157	3-731-192-01	GEAR, MIDWAY	
158	3-731-176-02	SPRING, TENSION	

Ref. No.	Part No.	Description	Remark
159	3-731-184-02	HOLDER LOCK	
160	3-731-189-01	SLIDER, LOCK	
161	3-731-188-01	ARM LOCK, DRIVING	
162	3-731-174-01	SPRING, TENSION	
163	X-3731-109-2	ARM (RIGHT) ASSY, DRIVING	
164	3-731-185-01	LINK, SWITCHING, DOOR	
165	X-3731-111-1	ARM (LEFT) ASSY, DRIVING	
M904	X-3731-108-1	FL MOTOR ASSY	

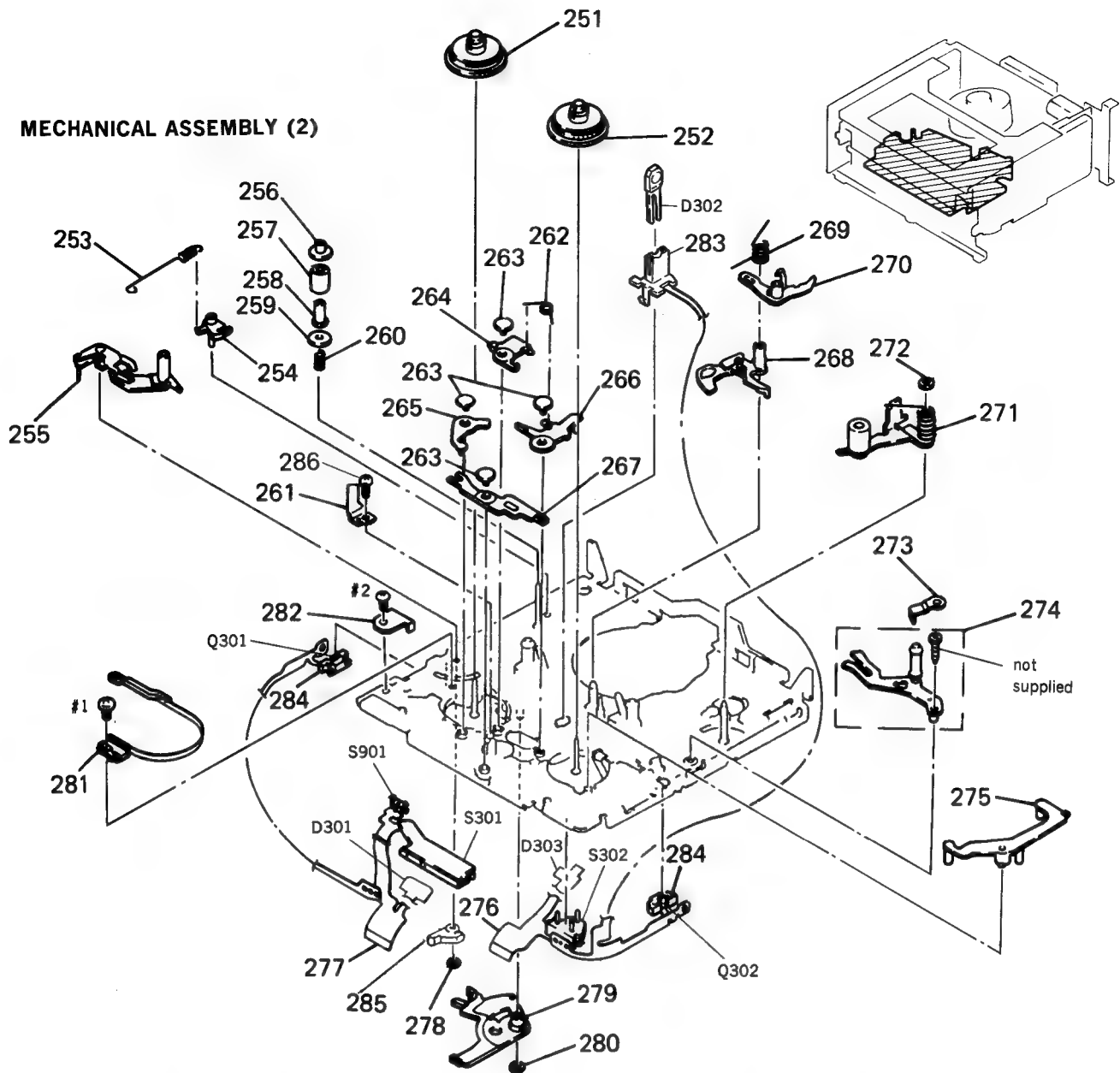
6-5. MECHANICAL ASSEMBLY (1)



Ref. No.	Part No.	Description	Remark
201	3-713-790-21	SCREW (M2X6), TAPPING, P3	
202	A-7049-626-A	DRUM ASSY, ROTARY (UPPER)	(DGR-0A8-R)
203	3-686-493-01	SCREW (M2X5), P1	
204	X-3686-482-5	BASE ASSY, DRUM	
205	X-3728-864-1	GROUND ASSY, SHAFT	
206	A-7040-207-A	ROLLER BLOCK ASSY, HC	
* 207	A-7063-830-A	UC-18 (B) BOARD, COMPLETE	
208	3-728-868-01	GUARD, GUIDE	
209	1-751-368-11	CABLE, FLAT (FUS-4) 16P	

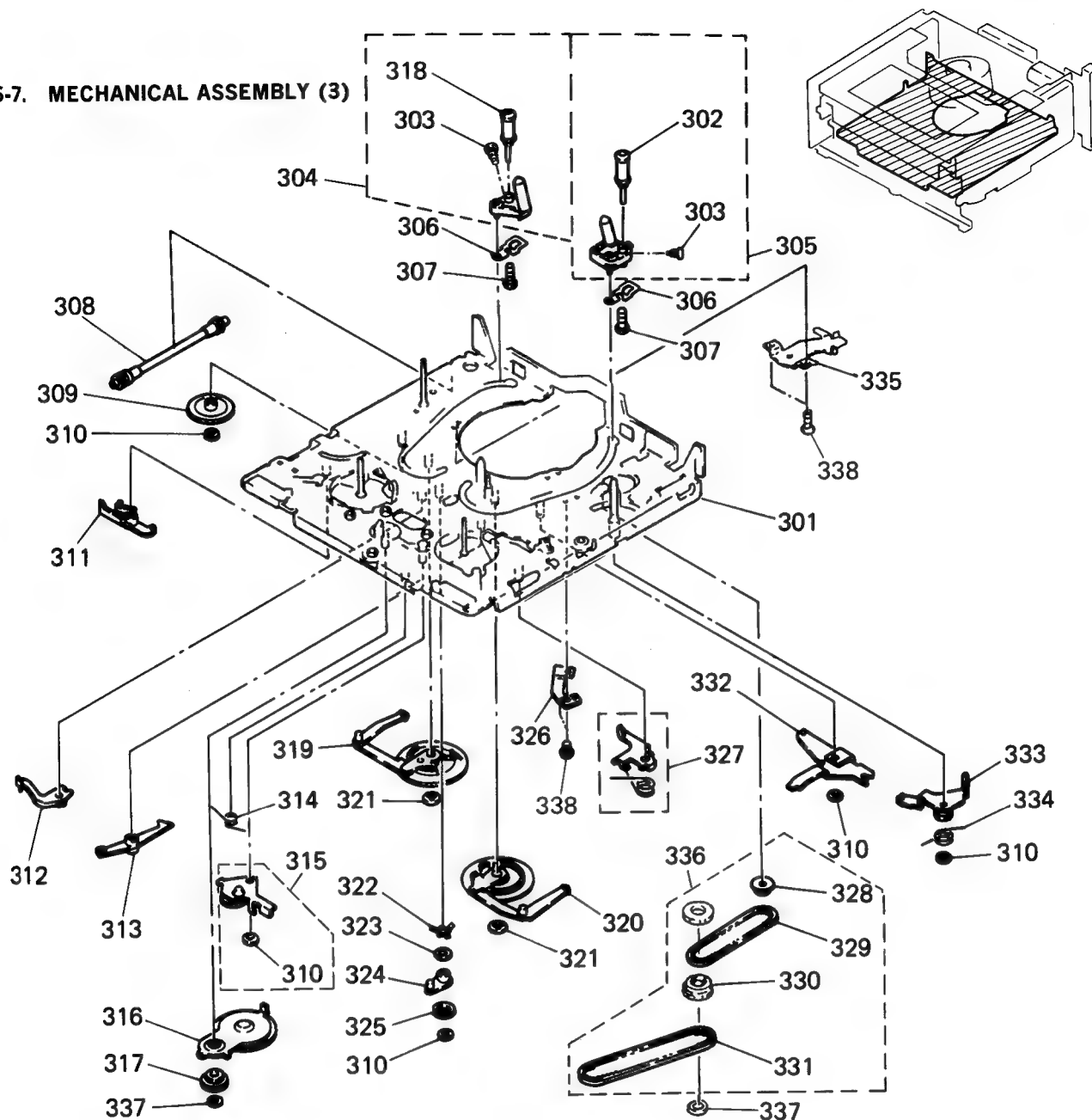
Ref. No.	Part No.	Description	Remark
210	X-3728-861-1	ROLLER ASSY, HC	
211	3-741-198-01	PLATE, HC	
212	X-3726-867-1	PRISM (LEFT) ASSY	
213	X-3726-866-1	PRISM (RIGHT) ASSY	
214	3-732-087-31	SCREW (M1.4X1.8), SPECIAL HEAD	
M901	A-7048-691-A	DRUM ASSY (DGU-0A8A-R)	
M902	8-835-331-01	MOTOR, DC U-22A (CAPSTAN)	
M903	A-7040-324-A	MOTOR ASSY (N), THREADING (LOADING)	

6-6. MECHANICAL ASSEMBLY (2)



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
251	X-3728-851-1	TABLE ASSY, REEL, S		273	3-728-808-01	SPRING, LEAF	
252	X-3728-855-6	TABLE ASSY, REEL, T		274	X-3728-869-1	ARM ASSY, TG7	
253	3-736-414-01	SPRING, TENSION		275	3-728-848-01	ARM, LB RELEASE	
254	3-728-855-03	ARM, ADJUSTMENT		276	1-628-061-12	FP-90 FLEXIBLE BOARD	
255	X-3728-867-1	ARM ASSY (S), TENSION REGULATOR		277	1-628-060-12	FP-89 FLEXIBLE BOARD	
256	3-726-884-01	FLANGE, UPPER, TG2		278	3-321-393-11	WASHER, STOPPER	
257	3-726-883-21	ROLLER, TG2		279	X-3728-863-1	LEVER ASSY, SW	
258	3-726-885-01	SLEEVE, TG2		280	3-726-829-01	WASHER, STOPPER	
259	3-726-882-02	FLANGE, LOWER, TG2		281	X-3728-859-1	BAND ASSY, TENSION REGULATOR	
260	3-726-886-01	SPRING, COMPRESSION		282	3-730-125-01	RETAINER, SW	
261	3-726-848-01	RETAINER, TL		* 283	3-948-326-01	HOLDER (N), LED	
262	3-726-866-01	SPRING (ST), TORSION		284	3-728-869-02	HOLDER, SENSOR	
263	3-726-858-01	PIN, SHAFT RETAINER		285	X-3728-857-1	STOPPER ASSY, TENSION REGULATOR	
264	3-728-849-01	BRAKE, S		286	3-732-087-31	SCREW (M1.4X1.8), SPECIAL HEAD	
265	3-726-852-01	BRAKE, LB		D301	8-719-820-44	DIODE TLP907-0 (SONY2) (S REEL)	
266	3-728-850-01	BRAKE, T		D302	8-719-026-04	DIODE GL453JS (TAPE LED)	
267	3-726-853-01	LEVER, LB		D303	8-719-820-44	DIODE TLP907-0 (SONY 2) (T REEL)	
268	3-728-875-01	STOPPER, RK		Q301	8-729-906-48	TRANSISTOR EE-TP109 (END SENS)	
269	3-726-864-01	SPRING (RK), TORSION		Q302	8-729-906-48	TRANSISTOR EE-TP109 (TOP SENS)	
270	3-728-852-02	ARM, RK STOPPER		S301	1-572-173-11	SWITCH, SLIDE (ENCODER)	
271	A-7040-219-A	ARM BLOCK ASSY, PINCH		S302	1-572-298-11	SWITCH, PUSH (REC PROOF/TAPE SELECT)	
272	3-669-465-00	WASHER (1.5), STOPPER		S901	1-571-099-11	SWITCH (CC DOWN)	

6-7. MECHANICAL ASSEMBLY (3)



Ref. No.	Part No.	Description	Remark
301	X-3728-862-1	CHASSIS ASSY, MECHANICAL	
302	X-3728-808-4	ROLLER ASSY (U) (PLATING), GUIDE	
303	3-726-822-03	SCREW (M1.4X2) (STEP), HEAD	
304	A-7040-204-H	COASTER (LEFT) BLOCK ASSY	
305	A-7040-217-E	COASTER (RIGHT) BLOCK ASSY (NIP)	
306	3-736-485-01	SPRING, LEAF, COSTER	
307	3-726-830-01	SCREW (M1.4X4) (THREE LOCK)	
308	X-3940-276-2	WORM ASSY	
309	3-744-109-01	GEAR, WHEEL	
310	3-726-829-01	WASHER, STOPPER	
311	3-728-842-01	LEVER, EJECT	
312	3-728-851-01	BRAKE, UL	
313	3-726-854-01	ARM, BRAKE RELEASE	
314	3-726-865-01	SPRING (LB), TORSION	
315	A-7040-225-A	GEAR BLOCK ASSY (N), LB	
316	X-3728-866-1	GEAR ASSY, RK	
317	X-3728-858-2	GEAR ASSY, RC	
318	X-3726-879-5	ROLLER ASSY ((U)-NB), GUIDE	
319	X-3728-842-1	GEAR (LEFT) ASSY, DRIVE	

Ref. No.	Part No.	Description	Remark
320	X-3728-843-1	GEAR (RIGHT) ASSY, DRIVE	
321	3-669-465-00	WASHER (1.5), STOPPER	
322	3-726-867-01	SPRING, LEAF	
323	3-701-436-21	WASHER, POLYETHYLENE	
324	3-726-857-03	ARM, UL	
325	3-726-856-04	GEAR, UL	
* 326	3-726-805-01	REINFORCEMENT (TT)	
327	X-3726-808-3	BRAKE ASSY, TS	
328	X-3726-805-1	GEAR ASSY, JOINT	
329	3-728-866-11	BELT (S), TIMING	
330	3-741-196-02	PULLEY (LOWER), BELT MIDWAY	
331	3-741-197-01	BELT (L), TIMING	
332	3-941-322-01	LEVER, LOADING	
333	X-3940-279-1	ARM ASSY, PINCH SUB	
334	3-726-895-01	SPRING	
335	X-3940-278-1	REINFORCEMENT (SS) ASSY	
336	X-3726-813-4	PULLEY (UPPER) ASSY, MIDWAY	
337	3-321-393-11	WASHER, STOPPER	
338	3-732-087-31	SCREW (M1.4X1.8), SPECIAL HEAD	

AU-156

SECTION 7
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
All resistors are in ohms.
METAL: Metal-film resistor.
METAL OXIDE: Metal oxide-film resistor.
F: nonflammable

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
In each case, u: μ , for example:
uA...: μ A... uPA...: μ PA...
uPB...: μ PB... uPC...: μ PC... uPD...: μ PD...
- CAPACITORS
uF: μ F
- COILS
uH: μ H

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	A-7063-736-A	AU-156 (B) BOARD, COMPLETE ***** (Ref. No. 4000 series)		C937	1-163-031-11	CERAMIC CHIP	0.01uF 50V
		< CAPACITOR >		C938	1-126-157-11	ELECT	10uF 20% 16V
C591	1-165-319-11	CERAMIC CHIP	0.1uF 50V	C939	1-163-031-11	CERAMIC CHIP	0.01uF 50V
C592	1-165-319-11	CERAMIC CHIP	0.1uF 50V	C940	1-163-031-11	CERAMIC CHIP	0.01uF 50V
C701	1-163-809-11	CERAMIC CHIP	0.047uF 10% 25V	C942	1-126-301-11	ELECT	1uF 20% 50V
C702	1-163-809-11	CERAMIC CHIP	0.047uF 10% 25V	C943	1-164-005-11	CERAMIC CHIP	0.47uF 25V
C703	1-126-163-11	ELECT	4.7uF 20% 50V	C944	1-164-005-11	CERAMIC CHIP	0.47uF 25V
C704	1-164-633-11	CERAMIC CHIP	0.1uF 10% 25V	C945	1-164-232-11	CERAMIC CHIP	0.01uF 50V
C705	1-164-633-11	CERAMIC CHIP	0.1uF 10% 25V	C946	1-163-809-11	CERAMIC CHIP	0.047uF 10% 25V
C706	1-126-163-11	ELECT	4.7uF 20% 50V	C947	1-163-003-11	CERAMIC CHIP	330PF 10% 50V
C708	1-163-014-00	CERAMIC CHIP	0.0027uF 10% 50V	C948	1-126-301-11	ELECT	1uF 20% 50V
C901	1-126-157-11	ELECT	10uF 20% 16V	C949	1-164-232-11	CERAMIC CHIP	0.01uF 50V
C902	1-163-031-11	CERAMIC CHIP	0.01uF 50V	C950	1-163-031-11	CERAMIC CHIP	0.01uF 50V
C903	1-124-257-00	ELECT	2.2uF 20% 50V	C951	1-163-031-11	CERAMIC CHIP	0.01uF 50V
C904	1-126-157-11	ELECT	10uF 20% 16V	C952	1-163-031-11	CERAMIC CHIP	0.01uF 50V
C905	1-126-163-11	ELECT	4.7uF 20% 50V	C953	1-163-031-11	CERAMIC CHIP	0.01uF 50V
C906	1-163-017-00	CERAMIC CHIP	0.0047uF 5% 50V	C954	1-163-031-11	CERAMIC CHIP	0.01uF 50V
C907	1-126-154-11	ELECT	47uF 20% 6.3V	C955	1-163-031-11	CERAMIC CHIP	0.01uF 50V
C909	1-163-017-00	CERAMIC CHIP	0.0047uF 5% 50V	C956	1-163-031-11	CERAMIC CHIP	0.01uF 50V
C910	1-163-017-00	CERAMIC CHIP	0.0047uF 5% 50V	C957	1-163-031-11	CERAMIC CHIP	0.01uF 50V
C911	1-126-163-11	ELECT	4.7uF 20% 50V	C959	1-163-019-00	CERAMIC CHIP	0.0068uF 10% 50V
C913	1-126-157-11	ELECT	10uF 20% 16V	C960	1-164-232-11	CERAMIC CHIP	0.01uF 50V
C914	1-124-229-00	ELECT	33uF 20% 10V	C961	1-124-638-11	ELECT	22uF 20% 10V
C916	1-126-154-11	ELECT	47uF 20% 6.3V	C962	1-124-638-11	ELECT	22uF 20% 10V
C918	1-124-638-11	ELECT	22uF 20% 10V	C963	1-165-319-11	CERAMIC CHIP	0.1uF 50V
C919	1-124-589-11	ELECT	47uF 20% 16V	C964	1-124-638-11	ELECT	22uF 20% 10V
C920	1-163-031-11	CERAMIC CHIP	0.01uF 50V	C965	1-124-638-11	ELECT	22uF 20% 10V
C922	1-124-638-11	ELECT	22uF 20% 10V	C966	1-163-035-00	CERAMIC CHIP	0.047uF 50V
C924	1-163-031-11	CERAMIC CHIP	0.01uF 50V	C969	1-163-031-11	CERAMIC CHIP	0.01uF 50V
C928	1-126-163-11	ELECT	4.7uF 20% 50V	C970	1-163-031-11	CERAMIC CHIP	0.01uF 50V
C929	1-163-017-00	CERAMIC CHIP	0.0047uF 5% 50V	C972	1-163-031-11	CERAMIC CHIP	0.01uF 50V
C930	1-163-017-00	CERAMIC CHIP	0.0047uF 5% 50V	C973	1-163-031-11	CERAMIC CHIP	0.01uF 50V
C932	1-126-154-11	ELECT	47uF 20% 6.3V	C974	1-163-031-11	CERAMIC CHIP	0.01uF 50V
C933	1-126-163-11	ELECT	4.7uF 20% 50V	C975	1-163-031-11	CERAMIC CHIP	0.01uF 50V
C934	1-163-017-00	CERAMIC CHIP	0.0047uF 5% 50V	C976	1-163-035-00	CERAMIC CHIP	0.047uF 50V
C935	1-126-157-11	ELECT	10uF 20% 16V	C977	1-126-154-11	ELECT	47uF 20% 6.3V
C936	1-124-257-00	ELECT	2.2uF 20% 50V	C980	1-163-035-00	CERAMIC CHIP	0.047uF 50V
				C984	1-126-157-11	ELECT	10uF 20% 16V
				C991	1-163-031-11	CERAMIC CHIP	0.01uF 50V
				C992	1-163-031-11	CERAMIC CHIP	0.01uF 50V

Ref. No.	Part No.	Description	Remark
C993	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C994	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C995	1-163-031-11	CERAMIC CHIP 0.01uF	50V
< CONNECTOR >			
* CN901	1-562-895-11	SOCKET, CONNECTOR 14P	
* CN902	1-562-638-11	SOCKET, CONNECTOR 8P	
< DIODE >			
D903	8-719-801-48	DIODE 1SS193	
< FILTER >			
FL901	1-236-837-21	FILTER, BAND PASS	
FL902	1-236-838-21	FILTER, BAND PASS	
< IC >			
IC503	8-759-234-77	IC TC4S66F	
IC701	8-759-100-96	IC uPC4558G2	
IC901	8-759-169-76	IC AN3986FBP-NS	
IC902	8-752-334-42	IC CXD2106Q	
< COIL >			
L903	1-407-169-XX	INDUCTOR 100uH	
< TRANSISTOR >			
Q518	8-729-421-19	TRANSISTOR UN2213	
Q702	8-729-901-06	TRANSISTOR DTA144EK	
Q703	8-729-403-07	TRANSISTOR XN1213	
Q704	8-729-421-19	TRANSISTOR UN2213	
Q705	8-729-422-54	TRANSISTOR XN4215	
Q706	8-729-421-19	TRANSISTOR UN2213	
Q901	8-729-402-19	TRANSISTOR XN6501	
Q902	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q903	8-729-402-19	TRANSISTOR XN6501	
Q904	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q909	8-729-922-87	TRANSISTOR 2SD1757K-RS	
Q910	8-729-922-87	TRANSISTOR 2SD1757K-RS	
Q914	8-729-901-06	TRANSISTOR DTA144EK	
Q915	8-729-402-19	TRANSISTOR XN6501	
Q916	8-729-402-19	TRANSISTOR XN6501	
< RESISTOR >			
R505	1-216-295-00	METAL CHIP 0 5% 1/10W	
R553	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R555	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R556	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R591	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R592	1-216-073-00	METAL CHIP 10K 5% 1/10W	

Ref. No.	Part No.	Description	Remark
R594	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R701	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R702	1-216-113-00	METAL CHIP 470K 5% 1/10W	
R703	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R704	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R705	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	
R706	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R707	1-216-113-00	METAL CHIP 470K 5% 1/10W	
R708	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R709	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R710	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R901	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R902	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R903	1-216-091-00	METAL CHIP 56K 5% 1/10W	
R904	1-216-083-00	METAL CHIP 27K 5% 1/10W	
R907	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R908	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R912	1-216-033-00	METAL CHIP 220 5% 1/10W	
R913	1-216-033-00	METAL CHIP 220 5% 1/10W	
R919	1-216-091-00	METAL CHIP 56K 5% 1/10W	
R920	1-216-083-00	METAL CHIP 27K 5% 1/10W	
R921	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R922	1-216-295-00	METAL CHIP 0 5% 1/10W	
R923	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R924	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R925	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R926	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R927	1-216-295-00	METAL CHIP 0 5% 1/10W	
R929	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R930	1-216-295-00	METAL CHIP 0 5% 1/10W	
R932	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R933	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
R934	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R935	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	
R936	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R937	1-216-079-00	METAL CHIP 18K 5% 1/10W	
R938	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R939	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R940	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R941	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R942	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R943	1-216-041-00	METAL CHIP 470 5% 1/10W	
R947	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R948	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R949	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R950	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R951	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R952	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R953	1-216-075-00	METAL CHIP 12K 5% 1/10W	

AU-156**CC-82****FP-89****FP-90****FT-80**

Ref. No.	Part No.	Description	Remark
R954	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R955	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R958	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R959	1-216-105-00	METAL CHIP 220K 5% 1/10W	
R960	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R964	1-216-295-00	METAL CHIP 0 5% 1/10W	
R965	1-216-295-00	METAL CHIP 0 5% 1/10W	
R967	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R968	1-216-103-00	METAL CHIP 180K 5% 1/10W	
R969	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R970	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R971	1-216-103-00	METAL CHIP 180K 5% 1/10W	
R972	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R973	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R974	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R975	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R976	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R977	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R978	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R983	1-216-057-91	METAL GLAZE 2.2K 5% 1/10W	
R987	1-216-295-00	METAL CHIP 0 5% 1/10W	
R988	1-216-295-00	METAL CHIP 0 5% 1/10W	
R989	1-216-083-00	METAL CHIP 27K 5% 1/10W	
R990	1-216-083-00	METAL CHIP 27K 5% 1/10W	
R991	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R992	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R993	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R994	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R995	1-216-047-00	METAL CHIP 820 5% 1/10W	
R996	1-216-047-00	METAL CHIP 820 5% 1/10W	
R997	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R998	1-216-049-00	METAL CHIP 1K 5% 1/10W	

< VARIABLE RESISTOR >

RV901 1-238-857-11 RES, ADJ, CERMET 22K

RV902 1-238-857-11 RES, ADJ, CERMET 22K

* A-7063-829-A CC-82 (B) BOARD, COMPLETE

(Ref. No. 2000 series)

1-751-009-11 CABLE, FLAT (FCS-4)

< CONNECTOR >

CN701 1-562-880-21 CONNECOTR, CARD EDGE 15P

CN702 1-566-547-11 CONNECTOR, FPC (NON ZIF) 15P

Ref. No.	Part No.	Description	Remark
*	1-628-060-12	FP-89 FLEXIBLE BOARD	

		(Ref. No. 2000 series)	
	3-728-869-02	HOLDER SENSOR	
		< DIODE >	
D301	8-719-820-44	DIODE TLP907-0 (SONY2) (S REEL)	
		< TRANSISTOR >	
Q301	8-729-906-48	TRANSISTOR EE-TP109 (END SENS)	
		< SWITCH >	
S301	1-572-173-11	SWITCH SLIDE (ENCODER)	
S901	1-571-099-11	SWITCH (CC DOWN)	

*	1-628-061-12	FP-90 FLEXIBLE BOARD	

		(Ref. No. 2000 series)	
	3-728-869-02	HOLDER SENSOR	
		< DIODE >	
D302	8-719-026-04	DIODE GL453JS (TAPE LED)	
D303	8-719-820-44	DIODE TLP907-0 (SONY2) (T REEL)	
		< TRANSISTOR >	
Q302	8-729-906-48	TRANSISTOR EE-TP109 (TOP SENS)	
		< SWITCH >	
S302	1-572-298-11	SWITCH PUSH (REC PROOF/TAPE SELECT)	

*	A-7053-731-A	FT-80 (B) BOARD, COMPLETE (AEP)	
*	A-7053-854-A	FT-80 (C) BOARD, COMPLETE (UK)	

		(Ref. No. 5000 series)	
	1-696-411-11	CABLE, FLAT (FFT-8)	
	1-751-367-11	CABLE, FLAT (FFT-9)	
*	3-948-364-01	HOLDER (CX), INDICATION TUBE	
*	3-948-365-01	ILLUMINATOR (CX)	
		< CAPACITOR >	
C201	1-163-059-00	CERAMIC CHIP 0.01uF 10% 50V	
C202	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
		< CONNECTOR >	
CN201	1-569-933-11	HOUSING, CONNECTOR 16P	

Ref. No.	Part No.	Description	Remark
* CN202	1-691-050-21	HOUSING, CONNECTOR 18P	
		< DIODE >	
D201	8-719-812-32	LED TLY123 (FF)	
D202	8-719-940-82	LED SLR34MC3 (FWD)	
D203	8-719-951-35	DIODE SLV31MC3	
D204	8-719-940-82	LED SLR34MC3 (RVS)	
D205	8-719-812-32	LED TLY123 (REW)	
D206	8-719-951-35	DIODE SLV31MC3	
D207	8-719-946-30	LED SLR34DC3 (PAUSE)	
D208	8-719-951-35	DIODE SLV31MC3	
D209	8-719-940-99	LED SLR34VC3 (REC)	
D210	8-719-951-35	DIODE SLV31MC3	
D211	8-719-946-30	LED SLR34DC3 (EDIT)	
D212	8-719-946-30	LED SLR34DC3 (SYNCHRO EDIT)	
D213	8-719-951-35	DIODE SLV31MC3	
D214	8-719-940-82	LED SLR34MC3 (Hi8)	
D215	8-719-951-35	DIODE SLV31MC3	
D216	8-719-940-82	LED SLR34MC3 (Hi8)	
D217	8-719-812-32	LED TLY123 (VOICE BOOST)	
D218	8-719-940-99	LED SLR34VC3 (STEREO)	
D219	8-719-812-32	LED TLY123 (SUB/R)	
D220	8-719-812-32	LED TLY123 (MAIN/L)	
D221	8-719-940-99	LED SLR34VC3 (STANDBY) (AEP)	
D221	8-719-032-78	LED GL3UR8 (STANDBY) (UK)	
D222	8-719-940-82	LED SLR34MC3 (POWER)	
		< SWITCH >	
DMS201	1-572-662-21	SWITCH, ROTARY (PLAY/STOP/FORWARD/REVERSE)	
		< IC >	
IC201	8-759-171-92	IC BU2042F-T2	
IC202	8-741-100-47	IC SBX1610-09	
		< JUMPER RESISTOR >	
JR201	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR202	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR203	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR204	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR205	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR206	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR207	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR208	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR209	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR210	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR211	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR212	1-216-296-00	METAL CHIP 0 5% 1/8W	

Ref. No.	Part No.	Description	Remark
JR213	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR214	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR215	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR216	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR217	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR218	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR219	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR220	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR221	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR222	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR223	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR224	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR225	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR226	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR227	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR228	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR229	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR230	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR231	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR232	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR233	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR234	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR236	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR237	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR238	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR239	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR240	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR241	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR242	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR243	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR244	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR248	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR250	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR251	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR252	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR254	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR255	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR256	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR257	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR259	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR260	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR261	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR262	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR264	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR265	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR266	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR268	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR269	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR270	1-216-296-00	METAL CHIP 0 5% 1/8W	

FT-80

LC-46

Ref. No.	Part No.	Description	Remark
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< FLUORESCENT INDICATOR >

ND201	1-809-727-11	DISPLAY PANEL, LIQUID CRYSTAL	
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< TRANSISTOR >

Q201	8-729-424-18	TRANSISTOR UN2113	
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< RESISTOR >

R201	1-216-182-91	METAL GLAZE	220	5%	1/8W
R202	1-216-182-91	METAL GLAZE	220	5%	1/8W
R203	1-216-182-91	METAL GLAZE	220	5%	1/8W
R204	1-216-037-00	METAL CHIP	330	5%	1/10W
R205	1-216-033-00	METAL CHIP	220	5%	1/10W
R206	1-216-033-00	METAL CHIP	220	5%	1/10W
R207	1-216-033-00	METAL CHIP	220	5%	1/10W
R208	1-216-033-00	METAL CHIP	220	5%	1/10W
R209	1-216-182-91	METAL GLAZE	220	5%	1/8W
R210	1-216-017-00	METAL CHIP	47	5%	1/10W
R211	1-216-182-91	METAL GLAZE	220	5%	1/8W
R213	1-216-166-00	METAL GLAZE	47	5%	1/8W
R214	1-216-017-00	METAL CHIP	47	5%	1/10W
R215	1-216-033-00	METAL CHIP	220	5%	1/10W
R216	1-216-033-00	METAL CHIP	220	5%	1/10W
R217	1-216-033-00	METAL CHIP	220	5%	1/10W
R218	1-216-033-00	METAL CHIP	220	5%	1/10W
R219	1-216-031-00	METAL CHIP	180	5%	1/10W
R220	1-216-206-00	METAL GLAZE	2.2K	5%	1/8W
R221	1-216-206-00	METAL GLAZE	2.2K	5%	1/8W
R222	1-216-206-00	METAL GLAZE	2.2K	5%	1/8W
R223	1-216-029-00	METAL CHIP	150	5%	1/10W (AEP)
R223	1-216-033-00	METAL CHIP	220	5%	1/10W (UK)
R224	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R225	1-216-206-00	METAL GLAZE	2.2K	5%	1/8W
R226	1-216-206-00	METAL GLAZE	2.2K	5%	1/8W
R227	1-216-210-00	METAL GLAZE	3.3K	5%	1/8W
R228	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R229	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R230	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R231	1-216-214-00	METAL GLAZE	4.7K	5%	1/8W

< SWITCH >

S201	1-571-977-11	SWITCH, TACTIL (POWER)
S202	1-571-977-11	SWITCH, TACTIL (PAUSE)
S203	1-571-977-11	SWITCH, TACTIL (REC)
S204	1-571-977-11	SWITCH, TACTIL (EJECT)
S205	1-571-977-11	SWITCH, TACTIL (SYNCHRO EDIT)
S206	1-571-977-11	SWITCH, TACTIL (Hi8 AUTO/OFF)
S207	1-571-977-11	SWITCH, TACTIL (AUDIO LINE IN)

Ref. No.	Part No.	Description	Remark
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S208	1-571-977-11	SWITCH, TACTIL (EDIT)
S209	1-571-977-11	SWITCH, TACTIL (COUNTER RESET)
S210	1-571-977-11	SWITCH, TACTIL (VOICE BOOST)

* A-7063-732-A LC-46 (B) BOARD, COMPLETE

(Ref. No. 3000 series)

< CAPACITOR >

C101	1-163-038-00	CERAMIC CHIP	0.1uF	25V
C107	1-163-038-00	CERAMIC CHIP	0.1uF	25V
C108	1-126-157-11	ELECT	10uF	20% 16V
C109	1-163-038-00	CERAMIC CHIP	0.1uF	25V
C110	1-124-257-00	ELECT	2.2uF	20% 50V
C111	1-163-038-00	CERAMIC CHIP	0.1uF	25V
C112	1-124-635-00	ELECT	220uF	20% 6.3V
C117	1-124-638-11	ELECT	22uF	20% 10V
C118	1-126-157-11	ELECT	10uF	20% 16V

< CONNECTOR >

* CN101	1-691-050-21	HOUSING, CONNECTOR 18P
CN102	1-569-933-11	HOUSING, CONNECTOR 16P
CN103	1-568-093-11	CONNECTOR (PLUG) 20P

< DIODE >

△D101	8-719-914-43	DIODE	DAN202K
D102	8-719-914-43	DIODE	DAN202K
△D103	8-719-914-43	DIODE	DAN202K
D104	8-719-914-43	DIODE	DAN202K
△D105	8-719-914-43	DIODE	DAN202K

< IC >

IC101	8-759-186-35	IC	MB89092PFV-G-127A
IC102	8-759-999-02	IC	TL1596CDB
IC104	8-759-074-40	IC	PST572DMT-T1

< TRANSISTOR >

Q106	8-729-420-20	TRANSISTOR	XN4312
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< RESISTOR >

R101	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R102	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R103	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R105	1-216-049-00	METAL CHIP	1K	5%	1/10W
R108	1-216-049-00	METAL CHIP	1K	5%	1/10W
R109	1-216-073-00	METAL CHIP	10K	5%	1/10W
R110	1-216-073-00	METAL CHIP	10K	5%	1/10W
R111	1-216-073-00	METAL CHIP	10K	5%	1/10W
R112	1-216-073-00	METAL CHIP	10K	5%	1/10W

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description			Remark
R113	1-216-073-00	METAL CHIP	10K	5%	1/10W
R114	1-216-073-00	METAL CHIP	10K	5%	1/10W
R115	1-216-073-00	METAL CHIP	10K	5%	1/10W
R116	1-216-073-00	METAL CHIP	10K	5%	1/10W
R117	1-216-073-00	METAL CHIP	10K	5%	1/10W
R118	1-216-073-00	METAL CHIP	10K	5%	1/10W
R119	1-216-073-00	METAL CHIP	10K	5%	1/10W
R120	1-216-073-00	METAL CHIP	10K	5%	1/10W
R121	1-216-295-00	METAL CHIP	0	5%	1/10W
R122	1-216-049-00	METAL CHIP	1K	5%	1/10W
R123	1-216-049-00	METAL CHIP	1K	5%	1/10W
R124	1-216-049-00	METAL CHIP	1K	5%	1/10W
R125	1-216-073-00	METAL CHIP	10K	5%	1/10W
R126	1-216-073-00	METAL CHIP	10K	5%	1/10W
R127	1-216-073-00	METAL CHIP	10K	5%	1/10W
R128	1-216-049-00	METAL CHIP	1K	5%	1/10W
R129	1-216-073-00	METAL CHIP	10K	5%	1/10W
R130	1-216-596-11	METAL GLAZE	2.7K	1%	1/10W
R131	1-216-049-00	METAL CHIP	1K	5%	1/10W
R132	1-216-105-00	METAL CHIP	220K	5%	1/10W
R133	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R135	1-216-295-00	METAL CHIP	0	5%	1/10W
R136	1-216-295-00	METAL CHIP	0	5%	1/10W
R137	1-216-295-00	METAL CHIP	0	5%	1/10W
R138	1-216-073-00	METAL CHIP	10K	5%	1/10W
R139	1-216-073-00	METAL CHIP	10K	5%	1/10W
R140	1-216-113-00	METAL CHIP	470K	5%	1/10W
R142	1-216-049-00	METAL CHIP	1K	5%	1/10W
R146	1-216-049-00	METAL CHIP	1K	5%	1/10W
R147	1-216-073-00	METAL CHIP	10K	5%	1/10W
R148	1-216-295-00	METAL CHIP	0	5%	1/10W
R149	1-216-049-00	METAL CHIP	1K	5%	1/10W
R150	1-216-049-00	METAL CHIP	1K	5%	1/10W
R153	1-216-041-00	METAL CHIP	470	5%	1/10W
R155	1-216-295-00	METAL CHIP	0	5%	1/10W

< VARIABLE RESISTOR >

RV101 1-228-994-00 RES, ADJ, METAL 10K
RV102 1-228-994-00 RES, ADJ, METAL 10K

< VIBRATOR >

X101 1-579-175-11 VIBRATOR, CERAMIC (10MHZ)

Ref. No.	Part No.	Description	Remark		
*	1-413-887-11	POWER BLOCK (AEP)			
*	1-413-887-21	POWER BLOCK (UK)			



(Ref. No. 6000 series)					
< CAPACITOR >					
△C101	1-130-711-00	MYLAR	0.22uF	20%	250V
△C102	9-905-596-01	CERAMIC	1000PF	20%	400V
△C103	9-905-596-01	CERAMIC	1000PF	20%	400V
△C104	9-905-596-01	CERAMIC	1000PF	20%	400V
△C105	9-905-596-01	CERAMIC	1000PF	20%	400V
△C106	9-902-039-01	MYLAR	0.1uF		250V
△C107	1-162-599-12	CERAMIC	4700PF		400V
△C108	1-162-599-12	CERAMIC	4700PF		400V
△C109	1-162-599-12	CERAMIC	4700uF		400V
△C110	9-903-197-01	ELECT	47uF		400V
△C111	1-124-791-11	ELECT	1uF	20%	100V
△C112	9-902-055-01	CERAMIC	100PF		1KV
△C113	1-136-207-11	MYLAR	0.047uF		400V
△C114	1-130-491-00	FILM	0.047uF		50V
△C115	1-130-491-00	FILM	0.047uF		50V
△C116	1-130-491-00	FILM	0.047uF		50V
C201	1-124-360-00	ELECT	1000uF		16V
C202	1-126-101-11	ELECT	100uF		16V
C203	1-126-589-11	ELECT	2200uF		10V
C204	1-124-791-11	ELECT	1uF	20%	100V
C205	1-124-472-11	ELECT	470uF	20%	10V
C206	1-124-443-00	ELECT	100uF	20%	10V
C207	1-126-101-11	ELECT	100uF	20%	16V
C208	1-124-443-00	ELECT	100uF	20%	10V
C209	1-124-120-51	ELECT	220uF	20%	25V

< CONNECTOR >

* CN201 1-564-018-51 PIN. CONNECTOR 8P

< DIODE >

△D101	1-809-505-11	DIODE	S1WBA60
D102	8-719-304-63	DIODE	RM11C
D103	8-719-312-26	DIODE	EGG1
D104	8-719-200-82	DIODE	11ES2
D105	8-719-109-63	DIODE	RD3.0ES-B2
D106	8-719-912-20	DIODE	1SS120
D201	9-903-218-01	DIODE	ERA32-02
△D202	8-719-160-78	DIODE	RD24F-B2
D203	9-903-219-01	DIODE	RK44
D204	8-719-975-85	DIODE	AK04
D205	8-719-313-16	DIODE	AU02Z

The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

POWER

RJ-48

RJ-49

Ref. No.	Part No.	Description	Remark
< FUSE >			
△F101	1-532-203-11	FUSE, TIMER-LAG 2A 250V	
< IC >			
△IC201	9-903-221-01	IC PQ05RF14	
△IC202	8-759-420-19	IC AN1431T	
△IC203	9-903-223-01	IC TA79L005P	
< COIL >			
△L101	9-900-520-01	FILTER, LINE	
L102	9-903-997-01	CORE, BEAD	
△L201	9-900-539-01	CHOKE COIL 10uH	
△L202	9-900-539-01	CHOKE COIL 10uH	
< IC LINK >			
△PS201	1-532-637-21	IC LINK ICP-N25 1.0A	
< PHOTO COUPLER >			
△PC101	9-903-965-01	PHOTO COUPLER PC120	
< TRANSISTOR >			
Q101	9-902-497-11	TRANSISTOR 2SC4231	
Q102	8-729-142-46	TRANSISTOR 2SC2001-LK	
< RESISTOR >			
△R101	9-902-945-11	CARBON 1M 1/2W F	
△R102	9-904-186-01	CEMENT 4.7 2W	
△R103	9-903-208-01	CARBON 220K 5% 1/2W	
△R104	9-903-208-01	CARBON 220K 5% 1/2W	
R105	1-249-433-11	CARBON 22K 5% 1/4W	
△R106	9-903-211-01	METAL OXIED 68K 3W	
△R107	9-903-213-01	CARBON 220 1/2W F	
R108	1-249-414-11	CARBON 560 1/4W	
R109	1-249-397-11	CARBON 22 1/4W	
R201	9-903-534-01	METAL OXIED 470 2W	
R203	1-247-735-11	CARBON 47 5% 1/2W	
R204	1-247-838-00	METAL 2K 1% 1/4W	
R205	9-903-480-01	METAL 1.6K 1% 1/4W	
R206	9-903-481-01	METAL 56K 1% 1/4W	
R207	1-249-429-11	CARBON 10K 5% 1/4W	
< TRANSFORMER >			
△T101	9-905-595-01	TRANSFORMER	
< VARIABLE RESISTOR >			
VR201	9-903-244-01	RES, ADJ, CERMET 500	

Ref. No.	Part No.	Description	Remark
* A-7063-735-A RJ-48 (A) BOARD, COMPLETE			

(Ref. No. 5000 series)			
< CAPACITOR >			
C701	1-126-157-11	ELECT 10uF 20% 16V	
C702	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
< CONNECTOR >			
* CN701	1-564-004-11	PIN, CONNECTOR 5P	
< DIODE >			
D701	8-719-106-79	DIODE RD13M-B1	
D702	8-719-421-59	DIODE MA3130WA-TX	
D703	8-719-421-59	DIODE MA3130WA-TX	
< JACK >			
J701	1-537-431-11	TERMINAL BOARD (LINE OUT2)	
< TRANSISTOR >			
Q701	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q702	8-729-101-07	TRANSISTOR 2SB798-DL	
< RESISTOR >			
R701	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R702	1-216-079-00	METAL CHIP 18K 5% 1/10W	
R703	1-216-138-00	METAL CHIP 3.3 5% 1/8W	
R704	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	

* A-7063-734-A RJ-49 (B) BOARD, COMPLETE			

(Ref. No. 5000 series)			
< CAPACITOR >			
C501	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C502	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C504	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C507	1-163-141-00	CERAMIC CHIP 0.001uF 5% 50V	
C508	1-163-141-00	CERAMIC CHIP 0.001uF 5% 50V	
C509	1-163-141-00	CERAMIC CHIP 0.001uF 5% 50V	
C510	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C511	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C512	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C513	1-163-141-00	CERAMIC CHIP 0.001uF 5% 50V	
C514	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C515	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C520	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C521	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	

The components identified by
mark △ or dotted line with mark.
△ are critical for safety.
Replace only with part number
specified.

Ref. No.	Part No.	Description	Remark		
C522	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
< CONNECTOR >					
CN501	1-568-079-11	CONNECTOR (RECEPTALE) 20P			
CN502	1-568-077-11	CONNECTOR (RECEPTALE) 16P			
< JACK >					
CNJ501	1-750-664-11	TERMINAL BLOCK, S (LINE IN, LINE OUT1)			
< DIODE >					
D503	8-719-421-59	DIODE	MA3130WA-TX		
D504	8-719-105-90	DIODE	RD5.6M-B1		
D505	8-719-421-59	DIODE	MA3130WA-TX		
D506	8-719-421-59	DIODE	MA3130WA-TX		
D507	8-719-106-43	DIODE	RD9.1M-B1		
D510	8-719-421-59	DIODE	MA3130WA-TX		
D511	8-719-421-59	DIODE	MA3130WA-TX		
D512	8-719-421-59	DIODE	MA3130WA-TX		
D513	8-719-106-43	DIODE	RD9.1M-B1		
D520	8-719-421-59	DIODE	MA3130WA-TX		
D521	8-719-421-59	DIODE	MA3130WA-TX		
D522	8-719-106-80	DIODE	RD13M-B2		
< JACK >					
J502	1-568-016-11	SOCKET, PIN 21P (EURO-AV)			
J503	1-507-792-31	JACK (CONTROL S IN)			
J505	1-568-800-11	JACK, ULTRA SMALL (CONTROL L)			
< JUMPER RESISTOR >					
JR501	1-216-295-00	METAL CHIP	0	5%	1/10W
JR502	1-216-296-00	METAL CHIP	0	5%	1/8W
JR503	1-216-295-00	METAL CHIP	0	5%	1/10W
JR505	1-216-295-00	METAL CHIP	0	5%	1/10W
JR507	1-216-295-00	METAL CHIP	0	5%	1/10W
JR508	1-216-295-00	METAL CHIP	0	5%	1/10W
JR509	1-216-295-00	METAL CHIP	0	5%	1/10W
JR510	1-216-295-00	METAL CHIP	0	5%	1/10W
JR511	1-216-295-00	METAL CHIP	0	5%	1/10W
JR512	1-216-296-00	METAL CHIP	0	5%	1/8W
JR513	1-216-295-00	METAL CHIP	0	5%	1/10W
JR514	1-216-295-00	METAL CHIP	0	5%	1/10W
JR515	1-216-295-00	METAL CHIP	0	5%	1/10W
JR516	1-216-295-00	METAL CHIP	0	5%	1/10W
JR517	1-216-295-00	METAL CHIP	0	5%	1/10W
JR518	1-216-295-00	METAL CHIP	0	5%	1/10W
JR519	1-216-296-00	METAL CHIP	0	5%	1/8W
JR521	1-216-295-00	METAL CHIP	0	5%	1/10W
JR523	1-216-295-00	METAL CHIP	0	5%	1/10W

Ref. No.	Part No.	Description	Remark		
JR524	1-216-296-00	METAL CHIP	0	5%	1/8W
JR525	1-216-296-00	METAL CHIP	0	5%	1/8W
JR527	1-216-296-00	METAL CHIP	0	5%	1/8W
JR528	1-216-296-00	METAL CHIP	0	5%	1/8W
JR529	1-216-296-00	METAL CHIP	0	5%	1/8W
JR530	1-216-296-00	METAL CHIP	0	5%	1/8W
JR531	1-216-296-00	METAL CHIP	0	5%	1/8W
JR532	1-216-296-00	METAL CHIP	0	5%	1/8W
JR533	1-216-296-00	METAL CHIP	0	5%	1/8W
JR534	1-216-296-00	METAL CHIP	0	5%	1/8W
JR535	1-216-296-00	METAL CHIP	0	5%	1/8W
< COIL >					
L501	1-412-390-21	INDUCTOR CHIP	0uH		
< RESISTOR >					
R501	1-216-295-00	METAL CHIP	0	5%	1/10W
R502	1-216-022-00	METAL CHIP	75	5%	1/10W
R503	1-216-015-00	METAL CHIP	39	5%	1/10W
R504	1-216-017-00	METAL CHIP	47	5%	1/10W
R505	1-216-022-00	METAL CHIP	75	5%	1/10W
R506	1-216-295-00	METAL CHIP	0	5%	1/10W
R509	1-216-039-00	METAL CHIP	390	5%	1/10W
R510	1-216-039-00	METAL CHIP	390	5%	1/10W
R520	1-216-295-00	METAL CHIP	0	5%	1/10W
R521	1-216-049-00	METAL CHIP	1K	5%	1/10W
R522	1-216-295-00	METAL CHIP	0	5%	1/10W
R523	1-216-049-00	METAL CHIP	1K	5%	1/10W
< SWITCH >					
S502	1-570-157-21	SWITCH, SLIDE (CONTROL L)			
S503	1-570-157-21	SWITCH, SLIDE (VIDEO OUT)			
S504	1-692-539-11	SWITCH, KEYBOARD (CL)			

*	A-7063-728-A RP-183 (A) BOARD, COMPLETE				

(Ref. No. 1000 series)					
1-569-347-11 CONNECTOR, FPC (TRANSLATION) 13P					
1-751-366-11 CABLE, FLAT (FRS-13)					
1-751-375-11 FP-37 FLEXIBLE BOARD					
< CAPACITOR >					
C001	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C002	1-163-091-00	CERAMIC CHIP	8PF		50V
C003	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C004	1-164-633-11	CERAMIC CHIP	0.1uF	10%	25V
C005	1-164-232-11	CERAMIC CHIP	0.01uF		50V

Ref. No.	Part No.	Description	Remark
C006	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C007	1-163-125-00	CERAMIC CHIP 220PF	5% 50V
C008	1-163-092-00	CERAMIC CHIP 9PF	0.25PF 50V
C009	1-163-092-00	CERAMIC CHIP 9PF	0.25PF 50V
C010	1-126-157-11	ELECT 10uF	20% 16V
C012	1-164-489-11	CERAMIC CHIP 0.22uF	10% 16V
C013	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C014	1-164-634-11	CERAMIC CHIP 1uF	16V
C015	1-126-157-11	ELECT 10uF	20% 16V
C016	1-163-222-11	CERAMIC CHIP 5PF	0.25PF 50V
C017	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C018	1-124-234-00	ELECT 22uF	20% 16V
C019	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C021	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C022	1-163-224-11	CERAMIC CHIP 7PF	0.25PF 50V
C023	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C024	1-164-633-11	CERAMIC CHIP 0.1uF	10% 25V
C025	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C026	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C027	1-163-125-00	CERAMIC CHIP 220PF	5% 50V
C028	1-163-092-00	CERAMIC CHIP 9PF	0.25PF 50V
C029	1-163-224-11	CERAMIC CHIP 7PF	0.25PF 50V
C030	1-126-154-11	ELECT 47uF	20% 6.3V
C032	1-164-489-11	CERAMIC CHIP 0.22uF	10% 16V
C033	1-164-634-11	CERAMIC CHIP 1uF	16V
C036	1-163-222-11	CERAMIC CHIP 5PF	0.25PF 50V
C037	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C038	1-126-157-11	ELECT 10uF	20% 16V
C039	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C040	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C041	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C042	1-126-157-11	ELECT 10uF	20% 16V
C043	1-127-558-11	ELECT(SOLID) 10uF	20% 10V
C044	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C045	1-163-239-11	CERAMIC CHIP 33PF	5% 50V
C046	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C047	1-127-558-11	ELECT(SOLID) 10uF	20% 10V
C049	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C050	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C051	1-164-633-11	CERAMIC CHIP 0.1uF	10% 25V
C053	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C054	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C055	1-163-115-00	CERAMIC CHIP 82PF	5% 50V
C056	1-163-251-11	CERAMIC CHIP 100PF	5% 50V
C057	1-163-121-00	CERAMIC CHIP 150PF	5% 50V
C059	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C060	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C063	1-164-633-11	CERAMIC CHIP 0.1uF	10% 25V
C064	1-163-031-11	CERAMIC CHIP 0.01uF	50V

Ref. No.	Part No.	Description	Remark
C065	1-163-031-11	CERAMIC CHIP 0.01uF	50V
< CONNECTOR >			
CN001	1-506-487-11	PIN, CONNECTOR 8P	
CN002	1-691-069-21	HOUSING, CONNECTOR 10P	
CN003	1-566-545-41	CONNECTOR, FPC (NON ZIF) 13P	
< DIODE >			
D001	8-719-404-46	DIODE MA110	
D002	8-719-404-46	DIODE MA110	
< IC >			
IC001	8-752-003-44	IC CX20034	
IC002	8-759-062-51	IC CXA1443M	
< COIL >			
L001	1-408-948-00	INDUCTOR 220uH	
L002	1-408-973-21	INDUCTOR 18uH	
L003	1-407-169-XX	INDUCTOR 100uH	
L004	1-408-974-21	INDUCTOR 22uH	
L006	1-408-973-21	INDUCTOR 18uH	
L007	1-408-969-21	INDUCTOR 8.2uH	
L008	1-408-970-21	INDUCTOR 10uH	
L009	1-408-970-21	INDUCTOR 10uH	
< TRANSISTOR >			
Q001	8-729-102-07	TRANSISTOR 2SC2223-F13	
Q002	8-729-102-07	TRANSISTOR 2SC2223-F13	
Q003	8-729-421-19	TRANSISTOR UN2213	
Q006	8-729-216-22	TRANSISTOR 2SA1162-G	
Q007	8-729-216-22	TRANSISTOR 2SA1162-G	
Q008	8-729-216-22	TRANSISTOR 2SA1162-G	
Q012	8-729-421-19	TRANSISTOR UN2213	
Q013	8-729-421-19	TRANSISTOR UN2213	
Q014	8-729-424-18	TRANSISTOR UN2113	
Q016	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
< RESISTOR >			
R001	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
R002	1-216-083-00	METAL CHIP 27K 5% 1/10W	
R003	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	
R004	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	
R005	1-216-093-00	METAL GLAZE 68K 5% 1/10W	
R006	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R007	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R008	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R009	1-216-001-00	METAL CHIP 10 5% 1/10W	
R010	1-216-031-00	METAL CHIP 180 5% 1/10W	

Ref. No.	Part No.	Description	Remark			
R011	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R012	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R013	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R014	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R015	1-216-091-00	METAL CHIP	56K	0.5%	1/10W	
R016	1-216-081-00	METAL CHIP	22K	0.5%	1/10W	
R017	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R018	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R019	1-216-001-00	METAL CHIP	10	5%	1/10W	
R020	1-216-031-00	METAL CHIP	180	5%	1/10W	
R021	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R022	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R023	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R024	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R025	1-216-683-11	METAL CHIP	22K	0.5%	1/10W	
R026	1-216-685-11	METAL CHIP	27K	0.5%	1/10W	
R028	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R029	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R031	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R032	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R037	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R038	1-216-021-00	METAL CHIP	68	5%	1/10W	
R040	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R041	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R042	1-216-035-00	METAL CHIP	270	5%	1/10W	
R043	1-216-033-00	METAL CHIP	220	5%	1/10W	
R044	1-216-057-91	METAL GLAZE	2.2K	5%	1/10W	
R045	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R046	1-216-021-00	METAL CHIP	68	5%	1/10W	
R047	1-216-017-00	METAL CHIP	47	5%	1/10W	
R048	1-216-043-00	METAL CHIP	560	5%	1/10W	
R057	1-216-025-00	METAL CHIP	100	5%	1/10W	
R058	1-216-025-00	METAL CHIP	100	5%	1/10W	
R059	1-216-025-00	METAL CHIP	100	5%	1/10W	
R060	1-216-295-00	METAL CHIP	0	5%	1/10W	
R062	1-216-025-00	METAL CHIP	100	5%	1/10W	
R063	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R064	1-216-025-00	METAL CHIP	100	5%	1/10W	
R067	1-216-295-00	METAL CHIP	0	5%	1/10W	
R070	1-216-295-00	METAL CHIP	0	5%	1/10W	
R071	1-216-295-00	METAL CHIP	0	5%	1/10W	
R073	1-216-025-00	METAL CHIP	100	5%	1/10W	

< VARIABLE RESISTOR >

RV001 1-230-720-11 RES, ADJ, CARBON 4.7K
RV002 1-230-720-11 RES, ADJ, CARBON 4.7K
RV003 1-230-721-11 RES, ADJ, CARBON 10K

Ref. No.	Part No.	Description	Remark			
*	A-7053-730-A	SS-155 (B) BOARD, COMPLETE	*****			
			(Ref. No. 2000 series)			
		1-696-042-11 CABLE, FLAT (FSV-4)				
		1-696-605-11 CABLE, FLAT (FSV-7) 28P				
*		3-947-505-01 CASE, SHIELD, PWM				
		< CAPACITOR >				
C006	1-163-101-00	CERAMIC CHIP	22PF	5%	50V	
C007	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C008	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C009	1-126-157-11	ELECT	10uF	20%	16V	
C010	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C012	1-163-229-11	CERAMIC CHIP	12PF	5%	50V	
C013	1-163-235-11	CERAMIC CHIP	22PF	5%	50V	
C015	1-163-087-00	CERAMIC CHIP	4PF		50V	
C016	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C017	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V	
C019	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V	
C020	1-126-157-11	ELECT	10uF	20%	16V	
C021	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C022	1-126-157-11	ELECT	10uF	20%	16V	
C023	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C024	1-126-157-11	ELECT	10uF	20%	16V	
C025	1-126-157-11	ELECT	10uF	20%	16V	
C026	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C029	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C030	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V	
C031	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C032	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C033	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C034	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C035	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C036	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C037	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C038	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C039	1-126-157-11	ELECT	10uF	20%	16V	
C040	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C041	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C042	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V	
C043	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V	
C045	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V	
C046	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V	
C101	1-164-633-11	CERAMIC CHIP	0.1uF	10%	25V	
C102	1-162-638-11	CERAMIC CHIP	1uF		16V	
C103	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C104	1-164-633-11	CERAMIC CHIP	0.1uF	10%	25V	
C105	1-164-633-11	CERAMIC CHIP	0.1uF	10%	25V	

Ref. No.	Part No.	Description	Remark		
C106	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C107	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C108	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C109	1-130-495-00	MYLAR	0.1uF	5%	50V
C110	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C111	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C112	1-126-163-11	ELECT	4.7uF	20%	50V
C113	1-164-330-21	CERAMIC CHIP	0.22uF	10%	16V
C114	1-164-330-21	CERAMIC CHIP	0.22uF	10%	16V
C115	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C116	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C117	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C118	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C120	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C121	1-126-301-11	ELECT	1uF	20%	50V
C122	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C123	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C124	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C125	1-124-589-11	ELECT	47uF	20%	16V
C126	1-127-498-00	ELECT(SOLID)	15uF	20%	16V
C127	1-163-257-11	CERAMIC CHIP	180PF	5%	50V
C128	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C129	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C131	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C132	1-127-558-11	ELECT(SOLID)	10uF	20%	10V
C134	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C135	1-127-558-11	ELECT(SOLID)	10uF	20%	10V
C136	1-127-512-00	ELECT(SOLID)	10uF	20%	16V
C137	1-126-157-11	ELECT	10uF	20%	16V
C140	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C144	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C145	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C146	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C147	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C148	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C149	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C151	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C152	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C901	1-163-005-11	CERAMIC CHIP	470PF	10%	50V

< CONNECTOR >

* CN001	1-691-087-21	HOUSING, CONNECTOR 28P
* CN002	1-691-072-11	HOUSING, CONNECTOR 13P
CN004	1-691-069-21	HOUSING, CONNECTOR 10P
CN005	1-566-532-11	CONNECTOR, FPC (ZIF) 16P
CN101	1-566-547-11	CONNECTOR, FPC (NON ZIF) 15P
CN102	1-566-542-31	CONNECTOR, FPC (NON ZIF) 10P
* CN103	1-565-541-11	PIN, CONNECTOR (PC BOARD) 2P
* CN104	1-565-541-11	PIN, CONNECTOR (PC BOARD) 2P

Ref. No.	Part No.	Description	Remark
< DIODE >			
△D002	8-719-200-27	DIODE E10DS2	
△D003	8-719-200-27	DIODE E10DS2	
D004	8-719-104-34	DIODE 1S2836	
D102	8-719-938-75	DIODE SB05-05CP	
D103	8-719-938-75	DIODE SB05-05CP	
D106	8-719-914-44	DIODE DAP202K	
< FERRITE BEAD >			
FB002	1-412-390-21	INDUCTOR CHIP 0uH	
FB003	1-412-390-21	INDUCTOR CHIP 0uH	
FB102	1-412-390-21	INDUCTOR CHIP 0uH	
FB103	1-412-390-21	INDUCTOR CHIP 0uH	
FB104	1-412-390-21	INDUCTOR CHIP 0uH	
< IC >			
IC002	8-752-844-24	IC CXP80624-469Q	
IC003	8-759-070-96	IC CXA1481AQ	
IC005	8-759-945-17	IC MB3775PF	
IC101	8-759-164-58	IC MCD002BM-TLM	
IC102	8-759-166-78	IC CXA8006BM-ELL1000	
IC103	8-759-148-05	IC CXA8010M	
IC104	8-759-823-94	IC LB1836M	
< COIL >			
L002	1-408-978-21	INDUCTOR 47uH	
L004	1-407-169-XX	INDUCTOR 100uH	
L007	1-408-970-21	INDUCTOR 10uH	
L008	1-424-522-21	COIL, CHOKE 10uH	
L009	1-424-524-21	COIL, CHOKE 47uH	
L010	1-424-524-21	COIL, CHOKE 47uH	
L101	1-412-010-41	INDUCTOR CHIP 22uH	
L901	1-414-170-11	INDUCTOR CHIP 100uH	
< IC LINK >			
△PS101	1-532-605-00	LINK, IC 0.4A (ICP-N10)	
△PS999	1-532-833-21	LINK, IC 0.25A (PRF 250)	

< TRANSISTOR >

Q001	8-729-901-01	TRANSISTOR DTC144EK
Q003	8-729-120-28	TRANSISTOR 2SC1623-L5L6
Q004	8-729-901-01	TRANSISTOR DTC144EK
Q005	8-729-901-01	TRANSISTOR DTC144EK
Q007	8-729-901-01	TRANSISTOR DTC144EK
Q102	8-729-901-06	TRANSISTOR DTA144EK
Q104	8-729-424-76	TRANSISTOR UN2210
Q105	8-729-424-76	TRANSISTOR UN2210
Q106	8-729-420-12	TRANSISTOR XN4213

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark	
△Q109	8-729-805-25	TRANSISTOR	2SB1121-S	
△Q111	8-729-805-25	TRANSISTOR	2SB1121-S	
Q112	8-729-216-22	TRANSISTOR	2SA1162-G	
Q113	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q114	8-729-402-81	TRANSISTOR	XN4501	
Q115	8-729-901-04	TRANSISTOR	DTA114EK	
Q116	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
< RESISTOR >				
R001	1-216-073-00	METAL CHIP	10K 5%	1/10W
R002	1-216-073-00	METAL CHIP	10K 5%	1/10W
R003	1-216-073-00	METAL CHIP	10K 5%	1/10W
R004	1-216-073-00	METAL CHIP	10K 5%	1/10W
R007	1-216-049-00	METAL CHIP	1K 5%	1/10W
R008	1-216-049-00	METAL CHIP	1K 5%	1/10W
R009	1-216-049-00	METAL CHIP	1K 5%	1/10W
R011	1-216-073-00	METAL CHIP	10K 5%	1/10W
R012	1-216-073-00	METAL CHIP	10K 5%	1/10W
R013	1-216-073-00	METAL CHIP	10K 5%	1/10W
R014	1-216-073-00	METAL CHIP	10K 5%	1/10W
R015	1-216-073-00	METAL CHIP	10K 5%	1/10W
R016	1-216-073-00	METAL CHIP	10K 5%	1/10W
R018	1-216-073-00	METAL CHIP	10K 5%	1/10W
R020	1-216-073-00	METAL CHIP	10K 5%	1/10W
R021	1-216-073-00	METAL CHIP	10K 5%	1/10W
R022	1-216-073-00	METAL CHIP	10K 5%	1/10W
R023	1-216-073-00	METAL CHIP	10K 5%	1/10W
R024	1-216-073-00	METAL CHIP	10K 5%	1/10W
R025	1-216-073-00	METAL CHIP	10K 5%	1/10W
R026	1-216-073-00	METAL CHIP	10K 5%	1/10W
R030	1-216-089-91	METAL GLAZE	47K 5%	1/10W
R033	1-216-049-00	METAL CHIP	1K 5%	1/10W
R034	1-216-097-00	METAL CHIP	100K 5%	1/10W
R035	1-216-097-00	METAL CHIP	100K 5%	1/10W
R036	1-216-097-00	METAL CHIP	100K 5%	1/10W
R037	1-216-049-00	METAL CHIP	1K 5%	1/10W
R039	1-216-049-00	METAL CHIP	1K 5%	1/10W
R040	1-216-073-00	METAL CHIP	10K 5%	1/10W
R041	1-216-073-00	METAL CHIP	10K 5%	1/10W
R042	1-216-089-91	METAL GLAZE	47K 5%	1/10W
R043	1-216-089-91	METAL GLAZE	47K 5%	1/10W
R044	1-216-089-91	METAL GLAZE	47K 5%	1/10W
R046	1-216-049-00	METAL CHIP	1K 5%	1/10W
R048	1-216-049-00	METAL CHIP	1K 5%	1/10W
R052	1-216-057-00	METAL GLAZE	2.2K 5%	1/10W
R053	1-216-049-00	METAL CHIP	1K 5%	1/10W
R055	1-216-049-00	METAL CHIP	1K 5%	1/10W
R056	1-216-049-00	METAL CHIP	1K 5%	1/10W
R057	1-216-049-00	METAL CHIP	1K 5%	1/10W

Ref. No.	Part No.	Description	Remark	
R058	1-216-049-00	METAL CHIP	1K 5%	1/10W
R059	1-216-049-00	METAL CHIP	1K 5%	1/10W
R060	1-216-089-91	METAL GLAZE	47K 5%	1/10W
R061	1-216-089-91	METAL GLAZE	47K 5%	1/10W
R062	1-216-089-91	METAL GLAZE	47K 5%	1/10W
R063	1-216-089-91	METAL GLAZE	47K 5%	1/10W
R064	1-216-089-91	METAL GLAZE	47K 5%	1/10W
R065	1-216-089-91	METAL GLAZE	47K 5%	1/10W
R066	1-216-089-91	METAL GLAZE	47K 5%	1/10W
R067	1-216-089-91	METAL GLAZE	47K 5%	1/10W
R068	1-216-073-00	METAL CHIP	10K 5%	1/10W
R069	1-216-073-00	METAL CHIP	10K 5%	1/10W
R070	1-216-073-00	METAL CHIP	10K 5%	1/10W
R071	1-216-073-00	METAL CHIP	10K 5%	1/10W
R072	1-216-073-00	METAL CHIP	10K 5%	1/10W
R073	1-216-073-00	METAL CHIP	10K 5%	1/10W
R074	1-216-073-00	METAL CHIP	10K 5%	1/10W
R075	1-216-073-00	METAL CHIP	10K 5%	1/10W
R076	1-216-049-00	METAL CHIP	1K 5%	1/10W
R077	1-216-049-00	METAL CHIP	1K 5%	1/10W
R079	1-216-049-00	METAL CHIP	1K 5%	1/10W
R080	1-216-049-00	METAL CHIP	1K 5%	1/10W
R081	1-216-049-00	METAL CHIP	1K 5%	1/10W
R082	1-216-049-00	METAL CHIP	1K 5%	1/10W
R083	1-216-049-00	METAL CHIP	1K 5%	1/10W
R084	1-216-049-00	METAL CHIP	1K 5%	1/10W
R085	1-216-049-00	METAL CHIP	1K 5%	1/10W
R086	1-216-049-00	METAL CHIP	1K 5%	1/10W
R087	1-216-049-00	METAL CHIP	1K 5%	1/10W
R088	1-216-061-00	METAL CHIP	3.3K 5%	1/10W
R089	1-216-049-00	METAL CHIP	1K 5%	1/10W
R090	1-216-049-00	METAL CHIP	1K 5%	1/10W
R091	1-216-061-00	METAL CHIP	3.3K 5%	1/10W
R092	1-216-049-00	METAL CHIP	1K 5%	1/10W
R093	1-216-049-00	METAL CHIP	1K 5%	1/10W
R094	1-216-049-00	METAL CHIP	1K 5%	1/10W
R096	1-216-073-00	METAL CHIP	10K 5%	1/10W
R097	1-216-061-00	METAL CHIP	3.3K 5%	1/10W
R098	1-216-049-00	METAL CHIP	1K 5%	1/10W
R099	1-216-049-00	METAL CHIP	1K 5%	1/10W
R101	1-216-689-11	METAL CHIP	39K 0.5%	1/10W
R103	1-216-073-00	METAL CHIP	10K 5%	1/10W
R104	1-216-073-00	METAL CHIP	10K 5%	1/10W
R105	1-216-073-00	METAL CHIP	10K 5%	1/10W
R106	1-216-097-00	METAL CHIP	100K 5%	1/10W
R107	1-216-089-91	METAL GLAZE	47K 5%	1/10W
R108	1-216-089-91	METAL GLAZE	47K 5%	1/10W
R109	1-216-097-00	METAL CHIP	100K 5%	1/10W
R110	1-216-061-00	METAL CHIP	3.3K 5%	1/10W

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark		
R112	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R113	1-216-037-00	METAL CHIP	330	5%	1/10W
R116	1-217-671-11	METAL CHIP	1	5%	1/10W
R117	1-217-671-11	METAL CHIP	1	5%	1/10W
R118	1-217-671-11	METAL CHIP	1	5%	1/10W
R119	1-217-671-11	METAL CHIP	1	5%	1/10W
R120	1-216-083-00	METAL CHIP	27K	5%	1/10W
R121	1-216-083-00	METAL CHIP	27K	5%	1/10W
R122	1-216-295-00	METAL CHIP	0	5%	1/10W
R123	1-216-083-00	METAL CHIP	27K	5%	1/10W
R124	1-216-073-00	METAL CHIP	10K	5%	1/10W
R125	1-216-049-00	METAL CHIP	1K	5%	1/10W
R126	1-216-073-00	METAL CHIP	10K	5%	1/10W
R128	1-216-295-00	METAL CHIP	0	5%	1/10W
R130	1-216-121-00	METAL CHIP	1M	5%	1/10W
R131	1-216-121-00	METAL CHIP	1M	5%	1/10W
R134	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R135	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R136	1-216-025-00	METAL CHIP	100	5%	1/10W
R137	1-216-083-00	METAL CHIP	27K	5%	1/10W
R138	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R139	1-216-025-00	METAL CHIP	100	5%	1/10W
R140	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R141	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R142	1-216-033-00	METAL CHIP	220	5%	1/10W
R143	1-216-069-00	METAL CHIP	6.8K	0.5%	1/10W
R146	1-216-045-00	METAL CHIP	680	5%	1/10W
R147	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R148	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R151	1-216-045-00	METAL CHIP	680	5%	1/10W
R152	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R153	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R159	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R165	1-216-192-00	METAL CHIP	560	5%	1/8W
R166	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R171	1-216-295-00	METAL CHIP	0	5%	1/10W
R172	1-216-295-00	METAL CHIP	0	5%	1/10W
R177	1-216-295-00	METAL CHIP	0	5%	1/10W
R179	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R180	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R193	1-216-073-00	METAL CHIP	10K	5%	1/10W
R194	1-216-073-00	METAL CHIP	10K	5%	1/10W
R196	1-216-073-00	METAL CHIP	10K	5%	1/10W
R197	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R198	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R202	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R203	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R205	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R209	1-216-689-11	METAL CHIP	39K	0.5%	1/10W

Ref. No.	Part No.	Description	Remark		
R210	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R211	1-216-295-00	METAL CHIP	0	5%	1/10W
R212	1-216-081-00	METAL CHIP	22K	5%	1/10W
R213	1-216-097-00	METAL CHIP	100K	5%	1/10W
R214	1-216-073-00	METAL CHIP	10K	5%	1/10W
R217	1-216-041-00	METAL CHIP	470	5%	1/10W
R218	1-216-041-00	METAL CHIP	470	5%	1/10W
R219	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R221	1-216-295-00	METAL CHIP	0	5%	1/10W
R226	1-216-295-00	METAL CHIP	0	5%	1/10W
R228	1-216-045-00	METAL CHIP	680	5%	1/10W
R229	1-216-295-00	METAL CHIP	0	5%	1/10W
R230	1-216-099-00	METAL CHIP	120K	5%	1/10W
R231	1-216-099-00	METAL CHIP	120K	5%	1/10W
R232	1-216-172-00	METAL CHIP	82	5%	1/8W
R233	1-216-096-00	METAL GLAZE	91K	5%	1/10W
R234	1-216-109-00	METAL GLAZE	330K	5%	1/10W
R236	1-216-295-00	METAL CHIP	0	5%	1/10W
R238	1-216-295-00	METAL CHIP	0	5%	1/10W
R240	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R241	1-216-097-00	METAL CHIP	100K	5%	1/10W
R242	1-216-073-00	METAL CHIP	10K	5%	1/10W
R243	1-216-049-00	METAL CHIP	1K	5%	1/10W
R244	1-216-121-00	METAL CHIP	1M	5%	1/10W
R245	1-216-048-00	METAL CHIP	910	5%	1/10W
R246	1-216-095-00	METAL CHIP	82K	5%	1/10W
R247	1-216-031-00	METAL CHIP	180	5%	1/10W
R249	1-216-073-00	METAL CHIP	10K	5%	1/10W
R250	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R251	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R253	1-216-074-00	METAL CHIP	11K	5%	1/10W
R256	1-216-073-00	METAL CHIP	10K	5%	1/10W
R257	1-216-105-00	METAL CHIP	220K	5%	1/10W
R258	1-216-097-00	METAL CHIP	100K	5%	1/10W
R259	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R263	1-216-295-00	METAL CHIP	0	5%	1/10W
R282	1-216-041-00	METAL CHIP	470	5%	1/10W
< VARIABLE RESISTOR >					
RV102	1-241-593-11	RES, ADJ, METAL GRAZE	4.7K		
< VIBRATOR >					
X002	1-579-368-31	VIBRATOR, CRYSTAL (11.72MHz)			

Ref. No.	Part No.	Description	Remark			
*	A-7063-830-A	UC-18 (B) BOARD, COMPLETE				

		(Ref. No. 2000 series)				
	1-751-368-11	CABLE, FLAT (FUS-4)				
		< CONNECTOR >				
CN801	1-566-529-11	CONNECTOR, FPC (ZIF) 13P				
CN802	1-566-527-11	CONNECTOR, FPC (ZIF) 11P				
CN803	1-566-532-11	CONNECTOR, FPC (ZIF) 16P				

*	A-7063-733-A	VI-129 (A) BOARD, COMPLETE				

		(Ref. No. 1000 series)				
		< CAPACITOR >				
C100	1-124-638-11	ELECT	22uF	20%	10V	
C101	1-165-319-11	CERAMIC CHIP	0.1uF		50V	
C102	1-126-154-11	ELECT	47uF	20%	6.3V	
C103	1-163-034-00	CERAMIC CHIP	0.033uF		50V	
C104	1-163-237-11	CERAMIC CHIP	27PF	5%	50V	
C105	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C106	1-126-154-11	ELECT	47uF	20%	6.3V	
C107	1-165-319-11	CERAMIC CHIP	0.1uF		50V	
C109	1-165-319-11	CERAMIC CHIP	0.1uF		50V	
C110	1-165-319-11	CERAMIC CHIP	0.1uF		50V	
C112	1-126-154-11	ELECT	47uF	20%	6.3V	
C113	1-165-319-11	CERAMIC CHIP	0.1uF		50V	
C114	1-126-154-11	ELECT	47uF	20%	6.3V	
C116	1-124-638-11	ELECT	22uF	20%	10V	
C120	1-126-154-11	ELECT	47uF	20%	6.3V	
C121	1-165-319-11	CERAMIC CHIP	0.1uF		50V	
C122	1-126-154-11	ELECT	47uF	20%	6.3V	
C123	1-165-319-11	CERAMIC CHIP	0.1uF		50V	
C124	1-126-154-11	ELECT	47uF	20%	6.3V	
C205	1-165-319-11	CERAMIC CHIP	0.1uF		50V	
C210	1-126-157-11	ELECT	10uF	20%	16V	
C211	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C215	1-126-154-11	ELECT	47uF	20%	6.3V	
C216	1-126-154-11	ELECT	47uF	20%	6.3V	
C217	1-126-154-11	ELECT	47uF	20%	6.3V	
C220	1-126-157-11	ELECT	10uF	20%	16V	
C221	1-126-157-11	ELECT	10uF	20%	16V	
C251	1-163-109-00	CERAMIC CHIP	47PF	5%	50V	
C262	1-163-109-00	CERAMIC CHIP	47PF	5%	50V	
C301	1-126-154-11	ELECT	47uF	20%	6.3V	
C302	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C303	1-163-118-00	CERAMIC CHIP	110PF	5%	50V	
C304	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V	

Ref. No.	Part No.	Description	Remark			
C305	1-124-257-00	ELECT	2.2uF	20%	50V	
C307	1-126-163-11	ELECT	4.7uF	20%	50V	
C308	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C309	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V	
C310	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C311	1-126-301-11	ELECT	1uF	20%	50V	
C312	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V	
C313	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	
C314	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C316	1-163-085-00	CERAMIC CHIP	2PF		50V	
C317	1-163-105-00	CERAMIC CHIP	33PF	5%	50V	
C318	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C328	1-163-131-00	CERAMIC CHIP	390PF	5%	50V	
C402	1-163-113-00	CERAMIC CHIP	68PF	5%	50V	
C403	1-126-157-11	ELECT	10uF	20%	16V	
C404	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C405	1-124-638-11	ELECT	22uF	20%	10V	
C406	1-163-033-00	CERAMIC CHIP	0.022uF		50V	
C407	1-126-157-11	ELECT	10uF	20%	16V	
C408	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C409	1-163-121-00	CERAMIC CHIP	150PF	5%	50V	
C411	1-163-121-00	CERAMIC CHIP	150PF	5%	50V	
C412	1-163-131-00	CERAMIC CHIP	390PF	5%	50V	
C413	1-163-263-11	CERAMIC CHIP	330PF	5%	50V	
C414	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C415	1-126-157-11	ELECT	10uF	20%	16V	
C417	1-163-125-00	CERAMIC CHIP	220PF	5%	50V	
C600	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C601	1-126-154-11	ELECT	47uF	20%	6.3V	
C602	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C603	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C604	1-163-245-11	CERAMIC CHIP	56PF	5%	50V	
C605	1-163-121-00	CERAMIC CHIP	150PF	5%	50V	
C606	1-163-241-11	CERAMIC CHIP	39PF	5%	50V	
C607	1-163-115-00	CERAMIC CHIP	82PF	5%	50V	
C608	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C609	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C612	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C613	1-163-243-11	CERAMIC CHIP	47PF	5%	50V	
C614	1-163-114-00	CERAMIC CHIP	75PF	5%	50V	
C615	1-163-257-11	CERAMIC CHIP	180PF	5%	50V	
C616	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C617	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C618	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C620	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C621	1-165-319-11	CERAMIC CHIP	0.1uF		50V	
C622	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C625	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C627	1-163-253-11	CERAMIC CHIP	120PF	5%	50V	

Ref. No.	Part No.	Description	Remark		
C628	1-163-116-00	CERAMIC CHIP	91PF	5%	50V
C629	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V
C630	1-163-127-00	CERAMIC CHIP	270PF	5%	50V
C631	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C633	1-163-107-00	CERAMIC CHIP	39PF	5%	50V
C634	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C635	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C636	1-163-241-11	CERAMIC CHIP	39PF	5%	50V
C637	1-163-241-11	CERAMIC CHIP	39PF	5%	50V
C638	1-163-245-11	CERAMIC CHIP	56PF	5%	50V
C639	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C640	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C641	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C642	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C643	1-126-177-11	ELECT	100uF	20%	10V
C644	1-126-177-11	ELECT	100uF	20%	10V
C650	1-163-127-00	CERAMIC CHIP	270PF	5%	50V
C661	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C662	1-163-090-00	CERAMIC CHIP	7PF		50V
C663	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C664	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C665	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C666	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C667	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C668	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C669	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C670	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C671	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C672	1-126-163-11	ELECT	4.7uF	20%	50V
C673	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C674	1-163-095-00	CERAMIC CHIP	12PF	5%	50V
C676	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C677	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C678	1-163-090-00	CERAMIC CHIP	7PF		50V
C679	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C680	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C681	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C682	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C683	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C684	1-126-177-11	ELECT	100uF	20%	10V
C685	1-163-119-00	CERAMIC CHIP	120PF	5%	50V
C689	1-163-263-11	CERAMIC CHIP	330PF	5%	50V
C691	1-163-111-00	CERAMIC CHIP	56PF	5%	50V
C692	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C693	1-163-089-00	CERAMIC CHIP	6PF		50V
C694	1-163-091-00	CERAMIC CHIP	15PF	5%	50V
C696	1-163-111-00	CERAMIC CHIP	56PF	5%	50V
C697	1-126-154-11	ELECT	47uF	20%	6.3V
C698	1-163-095-00	CERAMIC CHIP	12PF	5%	50V

Ref. No.	Part No.	Description	Remark		
C701	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C704	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C705	1-124-638-11	ELECT	22uF	20%	10V
C706	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C707	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C708	1-163-241-11	CERAMIC CHIP	39PF	5%	50V
C709	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C710	1-126-177-11	ELECT	100uF	20%	10V
C711	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C712	1-163-111-00	CERAMIC CHIP	56PF	5%	50V
C713	1-163-091-00	CERAMIC CHIP	8PF		50V
C714	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C715	1-124-638-11	ELECT	22uF	20%	10V
C716	1-126-157-11	ELECT	10uF	20%	16V
C717	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C718	1-126-157-11	ELECT	10uF	20%	16V
C719	1-126-154-11	ELECT	47uF	20%	6.3V
C720	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C721	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C722	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C723	1-164-346-11	CERAMIC CHIP	1uF		16V
C724	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C725	1-126-157-11	ELECT	10uF	20%	16V
C726	1-163-089-00	CERAMIC CHIP	6PF	5%	50V
C727	1-126-157-11	ELECT	10uF	20%	16V
C728	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C729	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C730	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C731	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C732	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C733	1-126-157-11	ELECT	10uF	20%	16V
C734	1-126-157-11	ELECT	10uF	20%	16V
C735	1-164-346-11	CERAMIC CHIP	1uF		16V
C736	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C738	1-126-157-11	ELECT	10uF	20%	16V
C739	1-126-157-11	ELECT	10uF	20%	16V
C740	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C741	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C742	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C743	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C744	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C745	1-126-157-11	ELECT	10uF	20%	16V
C746	1-126-157-11	ELECT	10uF	20%	16V
C747	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C748	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C749	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C753	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C754	1-126-157-11	ELECT	10uF	20%	16V
C755	1-124-638-11	ELECT	22uF	20%	10V

Ref. No.	Part No.	Description	Remark		
C756	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C757	1-126-157-11	ELECT	10uF	20%	16V
C758	1-124-638-11	ELECT	22uF	20%	10V
C759	1-124-638-11	ELECT	22uF	20%	10V
C760	1-164-633-11	CERAMIC CHIP	0.1uF	10%	25V
C762	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C763	1-126-157-11	ELECT	10uF	20%	16V
C764	1-124-638-11	ELECT	22uF	20%	10V
C765	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C766	1-163-115-00	CERAMIC CHIP	82PF	5%	50V
C767	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C768	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C769	1-126-157-11	ELECT	10uF	20%	16V
C770	1-126-157-11	ELECT	10uF	20%	16V
C771	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C772	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C773	1-126-157-11	ELECT	10uF	20%	16V
C774	1-126-162-11	ELECT	3.3uF	20%	50V
C775	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C776	1-126-157-11	ELECT	10uF	20%	16V
C777	1-126-162-11	ELECT	3.3uF	20%	50V
C778	1-126-157-11	ELECT	10uF	20%	16V
C779	1-126-157-11	ELECT	10uF	20%	16V
C780	1-126-157-11	ELECT	10uF	20%	16V
C781	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C783	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C785	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C787	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C788	1-126-157-11	ELECT	10uF	20%	16V
C789	1-126-163-11	ELECT	4.7uF	20%	50V
C790	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C791	1-126-157-11	ELECT	10uF	20%	16V
C792	1-126-154-11	ELECT	47uF	20%	6.3V
C793	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C794	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C795	1-126-157-11	ELECT	10uF	20%	16V
C796	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C797	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C798	1-126-154-11	ELECT	47uF	20%	6.3V
C799	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C801	1-126-154-11	ELECT	47uF	20%	6.3V
C802	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C803	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C804	1-163-115-00	CERAMIC CHIP	82PF	5%	50V
C805	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C806	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C807	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C809	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C810	1-163-031-11	CERAMIC CHIP	0.01uF		50V

Ref. No.	Part No.	Description	Remark		
C811	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C812	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C813	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C814	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C815	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C816	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C817	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C819	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C820	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C821	1-163-245-11	CERAMIC CHIP	56PF	5%	50V
C822	1-126-154-11	ELECT	47uF	20%	6.3V
C823	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C841	1-126-157-11	ELECT	10uF	20%	16V
C842	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C843	1-126-157-11	ELECT	10uF	20%	16V
C844	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C845	1-126-154-11	ELECT	47uF	20%	6.3V
C848	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C849	1-126-301-11	ELECT	1uF	20%	50V
C850	1-126-301-11	ELECT	1uF	20%	50V
C851	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C852	1-126-301-11	ELECT	1uF	20%	50V
C853	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C854	1-126-157-11	ELECT	10uF	20%	16V
C855	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C856	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C859	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C860	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C861	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C862	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C863	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C864	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C865	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C866	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C868	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C869	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C870	1-126-157-11	ELECT	10uF	20%	16V
C871	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C872	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C874	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C875	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C876	1-126-154-11	ELECT	47uF	20%	6.3V
C877	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C901	1-163-115-00	CERAMIC CHIP	82PF	5%	50V
C902	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
< FILTER >					
CF801	1-579-371-11	FILTER, CERAMIC (5.17MHz)			

Ref. No.	Part No.	Description	Remark
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< CONNECTOR >

* CN501	1-691-087-21	HOUSING, CONNECTOR 28P	
* CN502	1-691-072-11	HOUSING, CONNECTOR 13P	
CN504	1-568-079-11	CONNECTOR (RECEPTALE) 20P	
* CN508	1-564-679-11	PIN, CONNECTOR 8P	
* CN509	1-564-988-11	PIN, CONNECTOR 14P	
CN511	1-568-093-11	CONNECTOR (PLUG) 20P	
* CN512	1-568-091-11	CONNECTOR (PLUG) 16P	

< DIODE >

△D101	8-719-105-91	DIODE RD5.6M-B2	
D301	8-719-914-43	DIODE DAN202K	
D601	8-719-914-43	DIODE DAN202K	
D602	8-719-914-43	DIODE DAN202K	
D610	8-719-800-76	DIODE 1SS226	
D611	8-719-914-43	DIODE DAN202K	
D612	8-719-914-43	DIODE DAN202K	
D613	8-719-914-43	DIODE DAN202K	
D614	8-719-914-43	DIODE DAN202K	
D615	8-719-914-43	DIODE DAN202K	
D616	8-719-914-43	DIODE DAN202K	
D619	8-719-914-43	DIODE DAN202K	
D622	8-719-914-43	DIODE DAN202K	
D626	8-719-914-43	DIODE DAN202K	
D680	8-719-914-44	DIODE DAP202K	
D800	8-719-914-43	DIODE DAN202K	
D902	8-719-914-43	DIODE DAN202K	

< FILTER >

FL301	1-236-188-11	FILTER, BAND PASS	
FL601	1-415-729-21	DELAY LINE, LC (Y)	
FL602	1-415-775-21	DELAY LINE, LC	
FL603	1-236-775-11	FILTER, LOW PASS (DEM)	
FL604	1-236-774-11	FILTER, LOW PASS (Y)	
FL605	1-239-055-21	FILTER, LOW PASS (CCD. PAL. Y)	
FL606	1-236-848-21	FILTER, LOW PASS	
FL801	1-236-849-21	FILTER, BAND PASS	
FL802	1-236-186-11	FILTER, BAND PASS	

< IC >

IC201	8-759-009-19	IC MC14081BF	
IC202	8-759-009-10	IC MC14069UBF	
IC203	8-759-009-10	IC MC14069UBF	
IC205	8-759-710-86	IC NJM2233BM	
IC250	8-759-100-96	IC uPC4558G2-E1	
IC401	8-752-031-49	IC CXA1203M	
IC601	8-752-054-87	IC CXA1207AQ	
IC602	8-759-925-60	IC BA401	

Ref. No.	Part No.	Description	Remark
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IC603	8-759-998-32	IC CXD-2107M	
IC604	8-759-320-76	IC HA118070FP	
IC605	8-759-710-07	IC NJM2234M	
IC606	8-752-333-24	IC CXL1506M	
IC607	8-752-333-24	IC CXL1506M	

IC801	8-759-710-07	IC NJM2234M	
IC802	8-752-039-34	IC CXA1208Q	

< COIL >

L101	1-408-978-21	INDUCTOR	47uH
L102	1-408-978-21	INDUCTOR	47uH
L103	1-408-978-21	INDUCTOR	47uH
L104	1-408-978-21	INDUCTOR	47uH
L105	1-408-978-21	INDUCTOR	47uH
L203	1-408-978-21	INDUCTOR	47uH
L205	1-408-978-21	INDUCTOR	47uH
L206	1-408-978-21	INDUCTOR	47uH
L601	1-408-978-21	INDUCTOR	47uH
L602	1-408-968-21	INDUCTOR	6.8uH
L603	1-408-948-00	INDUCTOR	220uH
L604	1-408-984-21	INDUCTOR	150uH
L606	1-408-983-21	INDUCTOR	120uH
L607	1-408-987-21	INDUCTOR	330uH
L609	1-408-983-21	INDUCTOR	120uH
L610	1-410-072-21	INDUCTOR	820uH
L611	1-408-985-21	INDUCTOR	180uH
L613	1-408-976-21	INDUCTOR	33uH
L614	1-408-970-21	INDUCTOR	10uH
L615	1-408-963-11	INDUCTOR	2.7uH
L616	1-408-969-21	INDUCTOR	8.2uH
L617	1-408-968-21	INDUCTOR	6.8uH
L618	1-408-976-21	INDUCTOR	33uH
L631	1-408-973-21	INDUCTOR	18uH
L632	1-408-989-21	INDUCTOR	470uH
L633	1-408-989-21	INDUCTOR	470uH
L634	1-408-973-21	INDUCTOR	18uH
L635	1-408-970-21	INDUCTOR	10uH
L636	1-408-975-21	INDUCTOR	27uH
L637	1-407-169-XX	INDUCTOR	100uH
L639	1-408-974-21	INDUCTOR	22uH
L640	1-408-973-21	INDUCTOR	18uH
L642	1-408-965-21	INDUCTOR	3.9uH
L643	1-408-971-21	INDUCTOR	12uH
L644	1-408-974-21	INDUCTOR	22uH
L645	1-408-976-21	INDUCTOR	33uH
L646	1-408-969-21	INDUCTOR	8.2uH
L647	1-408-977-21	INDUCTOR	39uH
L648	1-408-975-21	INDUCTOR	27uH
L650	1-410-988-11	INDUCTOR CHIP	0.39uH

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
L651	1-410-988-11	INDUCTOR CHIP 0.39uH		Q121	8-729-402-84	TRANSISTOR XN4601	
L653	1-410-988-11	INDUCTOR CHIP 0.39uH		Q125	8-729-402-84	TRANSISTOR XN4601	
L654	1-408-978-21	INDUCTOR 47uH		Q126	8-729-402-84	TRANSISTOR XN4601	
L655	1-410-988-11	INDUCTOR CHIP 0.39uH		Q200	8-729-421-19	TRANSISTOR UN2213	
L656	1-410-988-11	INDUCTOR CHIP 0.39uH		Q208	8-729-420-20	TRANSISTOR XN4312	
L657	1-410-988-11	INDUCTOR CHIP 0.39uH		Q209	8-729-420-20	TRANSISTOR XN4312	
L658	1-408-978-21	INDUCTOR 47uH		Q210	8-729-101-07	TRANSISTOR 2SB798-DL	
L659	1-410-988-11	INDUCTOR CHIP 0.39uH		Q213	8-729-420-20	TRANSISTOR XN4312	
L661	1-410-988-11	INDUCTOR CHIP 0.39uH		Q214	8-729-424-18	TRANSISTOR UN2113	
L662	1-410-988-11	INDUCTOR CHIP 0.39uH		Q215	8-729-422-27	TRANSISTOR 2SD601A-Q	
L663	1-408-978-21	INDUCTOR 47uH		Q216	8-729-421-19	TRANSISTOR UN2213	
L664	1-410-988-11	INDUCTOR CHIP 0.39uH		Q301	8-729-424-18	TRANSISTOR UN2113	
L665	1-410-988-11	INDUCTOR CHIP 0.39uH		Q302	8-729-402-81	TRANSISTOR XN4501	
L666	1-408-978-21	INDUCTOR 47uH		Q303	8-729-422-27	TRANSISTOR 2SD601A-Q	
L667	1-410-988-11	INDUCTOR CHIP 0.39uH		Q304	8-729-421-19	TRANSISTOR UN2213	
L668	1-408-978-21	INDUCTOR 47uH		Q305	8-729-421-19	TRANSISTOR UN2213	
L669	1-408-978-21	INDUCTOR 47uH		Q601	8-729-422-27	TRANSISTOR 2SD601A-Q	
L670	1-408-973-21	INDUCTOR 18uH		Q602	8-729-424-28	TRANSISTOR UN2116	
L672	1-408-974-21	INDUCTOR 22uH		Q603	8-729-422-27	TRANSISTOR 2SD601A-Q	
L801	1-408-978-21	INDUCTOR 47uH		Q604	8-729-422-27	TRANSISTOR 2SD601A-Q	
L802	1-407-169-XX	INDUCTOR 100uH		Q605	8-729-422-27	TRANSISTOR 2SD601A-Q	
L803	1-408-984-21	INDUCTOR 150uH		Q606	8-729-422-27	TRANSISTOR 2SD601A-Q	
L804	1-407-169-XX	INDUCTOR 100uH		Q607	8-729-424-76	TRANSISTOR UN2210	
L805	1-408-983-21	INDUCTOR 120uH		Q608	8-729-422-27	TRANSISTOR 2SD601A-Q	
L821	1-408-978-21	INDUCTOR 47uH		Q609	8-729-421-19	TRANSISTOR UN2213	
L823	1-408-975-21	INDUCTOR 27uH		Q610	8-729-422-27	TRANSISTOR 2SD601A-Q	
L824	1-407-169-XX	INDUCTOR 100uH		Q611	8-729-402-19	TRANSISTOR XN6501	
L825	1-408-966-21	INDUCTOR 4.7uH		Q613	8-729-216-22	TRANSISTOR 2SA1162-G	
L826	1-408-978-21	INDUCTOR 47uH		Q614	8-729-422-27	TRANSISTOR 2SD601A-Q	
L901	1-408-973-21	INDUCTOR 18uH		Q616	8-729-422-27	TRANSISTOR 2SD601A-Q	
< TRANSISTOR >				Q617	8-729-202-38	TRANSISTOR 2SC3326N-A	
△Q100	8-729-422-27	TRANSISTOR 2SD601A-Q		Q619	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q101	8-729-422-27	TRANSISTOR 2SD601A-Q		Q620	8-729-421-19	TRANSISTOR UN2213	
Q102	8-729-422-27	TRANSISTOR 2SD601A-Q		Q621	8-729-202-38	TRANSISTOR 2SC3326N-A	
Q103	8-729-422-27	TRANSISTOR 2SD601A-Q		Q622	8-729-424-18	TRANSISTOR UN2113	
Q104	8-729-422-27	TRANSISTOR 2SD601A-Q		Q623	8-729-403-02	TRANSISTOR XN4212	
Q105	8-729-422-27	TRANSISTOR 2SD601A-Q		Q624	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q106	8-729-422-27	TRANSISTOR 2SD601A-Q		Q641	8-729-903-10	TRANSISTOR FMW1	
Q107	8-729-422-27	TRANSISTOR 2SD601A-Q		Q642	8-729-202-38	TRANSISTOR 2SC3326N-A	
Q108	8-729-422-27	TRANSISTOR 2SD601A-Q		Q643	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q109	8-729-422-27	TRANSISTOR 2SD601A-Q		Q644	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q111	8-729-422-27	TRANSISTOR 2SD601A-Q		Q645	8-729-903-10	TRANSISTOR FMW1	
Q112	8-729-422-27	TRANSISTOR 2SD601A-Q		Q649	8-729-421-19	TRANSISTOR UN2213	
Q113	8-729-402-84	TRANSISTOR XN4601		Q650	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q114	8-729-402-84	TRANSISTOR XN4601		Q651	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q115	8-729-402-84	TRANSISTOR XN4601		Q652	8-729-424-18	TRANSISTOR UN2113	
Q119	8-729-402-84	TRANSISTOR XN4601		Q654	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q120	8-729-402-84	TRANSISTOR XN4601		Q655	8-729-422-27	TRANSISTOR 2SD601A-Q	
				Q656	8-729-422-27	TRANSISTOR 2SD601A-Q	

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
Q657	8-729-422-27	TRANSISTOR	2SD601A-Q	Q710	8-729-216-22	TRANSISTOR	2SA1162-G
Q658	8-729-422-27	TRANSISTOR	2SD601A-Q	Q712	8-729-421-19	TRANSISTOR	UN2213
Q659	8-729-424-18	TRANSISTOR	UN2113	Q713	8-729-420-20	TRANSISTOR	XN4312
Q660	8-729-424-18	TRANSISTOR	UN2113	Q714	8-729-421-19	TRANSISTOR	UN2213
Q661	8-729-422-27	TRANSISTOR	2SD601A-Q	Q718	8-729-421-19	TRANSISTOR	UN2213
Q662	8-729-422-27	TRANSISTOR	2SD601A-Q	Q719	8-729-216-22	TRANSISTOR	2SA1162-G
Q663	8-729-216-22	TRANSISTOR	2SA1162-G	Q720	8-729-424-18	TRANSISTOR	UN2113
Q664	8-729-424-56	TRANSISTOR	UN211L	Q721	8-729-216-22	TRANSISTOR	2SA1162-G
Q665	8-729-422-27	TRANSISTOR	2SD601A-Q	Q722	8-729-202-38	TRANSISTOR	2SC3326N-A
Q666	8-729-422-27	TRANSISTOR	2SD601A-Q	Q723	8-729-202-38	TRANSISTOR	2SC3326N-A
Q667	8-729-424-18	TRANSISTOR	UN2113	Q724	8-729-421-19	TRANSISTOR	UN2213
Q668	8-729-424-18	TRANSISTOR	UN2113	Q725	8-729-421-19	TRANSISTOR	UN2213
Q669	8-729-903-10	TRANSISTOR	FMW1	Q728	8-729-420-12	TRANSISTOR	XN4213
Q671	8-729-421-19	TRANSISTOR	UN2213	Q729	8-729-421-19	TRANSISTOR	UN2213
Q672	8-729-216-22	TRANSISTOR	2SA1162-G	Q739	8-729-424-18	TRANSISTOR	UN2113
Q674	8-729-422-27	TRANSISTOR	2SD601A-Q	Q790	8-729-421-19	TRANSISTOR	UN2213
Q675	8-729-216-22	TRANSISTOR	2SA1162-G	Q791	8-729-421-19	TRANSISTOR	UN2213
Q676	8-729-422-27	TRANSISTOR	2SD601A-Q	Q800	8-729-421-19	TRANSISTOR	UN2213
Q677	8-729-422-27	TRANSISTOR	2SD601A-Q	Q801	8-729-216-22	TRANSISTOR	2SA1162-G
Q678	8-729-422-27	TRANSISTOR	2SD601A-Q	Q803	8-729-424-18	TRANSISTOR	UN2113
Q679	8-729-216-22	TRANSISTOR	2SA1162-G	Q804	8-729-402-81	TRANSISTOR	XN4501
Q680	8-729-421-19	TRANSISTOR	2UN2213	Q805	8-729-422-27	TRANSISTOR	2SD601A-Q
Q681	8-729-424-56	TRANSISTOR	UN211L	Q806	8-729-422-27	TRANSISTOR	2SD601A-Q
Q682	8-729-216-22	TRANSISTOR	2SA1162-G	Q807	8-729-421-19	TRANSISTOR	UN2213
Q683	8-729-216-22	TRANSISTOR	2SA1162-G	Q810	8-729-421-19	TRANSISTOR	UN2213
Q684	8-729-424-18	TRANSISTOR	UN2113	Q821	8-729-422-27	TRANSISTOR	2SD601A-Q
Q685	8-729-422-27	TRANSISTOR	2SD601A-Q	Q822	8-729-424-18	TRANSISTOR	UN2113
Q686	8-729-216-22	TRANSISTOR	2SA1162-G	Q826	8-729-421-19	TRANSISTOR	UN2213
Q688	8-729-422-27	TRANSISTOR	2SD601A-Q	Q827	8-729-424-76	TRANSISTOR	UN2210
Q689	8-729-422-27	TRANSISTOR	2SD601A-Q	Q828	8-729-421-19	TRANSISTOR	UN2213
Q690	8-729-422-27	TRANSISTOR	2SD601A-Q	Q829	8-729-422-27	TRANSISTOR	2SD601A-Q
Q691	8-729-216-22	TRANSISTOR	2SA1162-G	Q831	8-729-424-18	TRANSISTOR	UN2113
Q692	8-729-216-22	TRANSISTOR	2SA1162-G	Q833	8-729-424-76	TRANSISTOR	UN2210
Q693	8-729-422-27	TRANSISTOR	2SD601A-Q	Q834	8-729-422-27	TRANSISTOR	2SD601A-Q
Q694	8-729-216-22	TRANSISTOR	2SA1162-G	Q836	8-729-422-27	TRANSISTOR	2SD601A-Q
Q695	8-729-216-22	TRANSISTOR	2SA1162-G	Q837	8-729-216-22	TRANSISTOR	2SA1162-G
Q696	8-729-421-19	TRANSISTOR	UN2213	Q840	8-729-216-22	TRANSISTOR	2SA1162-G
Q697	8-729-421-19	TRANSISTOR	UN2213	Q900	8-729-216-22	TRANSISTOR	2SA1162-G
Q698	8-729-421-19	TRANSISTOR	UN2213	Q906	8-729-420-20	TRANSISTOR	XN4312
Q699	8-729-216-22	TRANSISTOR	2SA1162-G	< RESISTOR >			
Q701	8-729-421-19	TRANSISTOR	UN2213	R101	1-216-073-00	METAL CHIP	10K 5% 1/10W
Q702	8-729-216-22	TRANSISTOR	2SA1162-G	R102	1-216-043-00	METAL CHIP	560 5% 1/10W
Q703	8-729-422-27	TRANSISTOR	2SD601A-Q	R104	1-216-033-00	METAL CHIP	220 5% 1/10W
Q704	8-729-216-22	TRANSISTOR	2SA1162-G	R105	1-216-073-00	METAL CHIP	10K 5% 1/10W
Q705	8-729-422-27	TRANSISTOR	2SD601A-Q	R106	1-216-049-00	METAL CHIP	1K 5% 1/10W
Q706	8-729-422-27	TRANSISTOR	2SD601A-Q	R107	1-216-043-00	METAL CHIP	560 5% 1/10W
Q707	8-729-904-20	TRANSISTOR	FMA2	R108	1-216-041-00	METAL CHIP	470 5% 1/10W
Q708	8-729-403-24	TRANSISTOR	XN4210	R109	1-216-039-00	METAL CHIP	390 5% 1/10W
Q709	8-729-216-22	TRANSISTOR	2SA1162-G				

Ref. No.	Part No.	Description	Remark		
R110	1-216-041-00	METAL CHIP	470	5%	1/10W
R111	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R112	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R113	1-216-073-00	METAL CHIP	10K	5%	1/10W
R114	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R115	1-216-072-00	METAL CHIP	9.1K	5%	1/10W
R118	1-216-049-00	METAL CHIP	1K	5%	1/10W
R119	1-216-081-00	METAL CHIP	22K	5%	1/10W
R120	1-216-085-00	METAL CHIP	33K	5%	1/10W
R121	1-216-041-00	METAL CHIP	470	5%	1/10W
R123	1-216-081-00	METAL CHIP	22K	5%	1/10W
R124	1-216-075-00	METAL CHIP	12K	5%	1/10W
R125	1-216-041-00	METAL CHIP	470	5%	1/10W
R126	1-216-039-00	METAL CHIP	390	5%	1/10W
R127	1-216-009-00	METAL CHIP	22	5%	1/10W
R128	1-216-049-00	METAL CHIP	1K	5%	1/10W
R129	1-216-043-00	METAL CHIP	560	5%	1/10W
R130	1-216-081-00	METAL CHIP	22K	5%	1/10W
R131	1-216-075-00	METAL CHIP	12K	5%	1/10W
R132	1-216-037-00	METAL CHIP	330	5%	1/10W
R133	1-216-049-00	METAL CHIP	1K	5%	1/10W
R140	1-216-025-00	METAL CHIP	100	5%	1/10W
R141	1-216-073-00	METAL CHIP	10K	5%	1/10W
R142	1-216-079-00	METAL CHIP	18K	5%	1/10W
R143	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R144	1-216-022-00	METAL CHIP	75	5%	1/10W
R145	1-216-025-00	METAL CHIP	100	5%	1/10W
R148	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R150	1-216-075-00	METAL CHIP	12K	5%	1/10W
R151	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R152	1-216-049-00	METAL CHIP	1K	5%	1/10W
R153	1-216-047-00	METAL CHIP	820	5%	1/10W
R154	1-216-025-00	METAL CHIP	100	5%	1/10W
R155	1-216-047-00	METAL CHIP	820	5%	1/10W
R156	1-216-025-00	METAL CHIP	100	5%	1/10W
R157	1-216-025-00	METAL CHIP	100	5%	1/10W
R158	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R159	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R160	1-216-309-00	METAL CHIP	5.6	5%	1/10W
R161	1-216-309-00	METAL CHIP	5.6	5%	1/10W
R162	1-216-019-00	METAL CHIP	56	5%	1/10W
R167	1-216-295-00	METAL CHIP	0	5%	1/10W
R169	1-216-075-00	METAL CHIP	12K	5%	1/10W
R170	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R171	1-216-049-00	METAL CHIP	1K	5%	1/10W
R172	1-216-047-00	METAL CHIP	820	5%	1/10W
R173	1-216-025-00	METAL CHIP	100	5%	1/10W
R174	1-216-047-00	METAL CHIP	820	5%	1/10W
R175	1-216-025-00	METAL CHIP	100	5%	1/10W

Ref. No.	Part No.	Description	Remark		
R177	1-216-025-00	METAL CHIP	100	5%	1/10W
R179	1-216-081-00	METAL CHIP	22K	5%	1/10W
R180	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R181	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R182	1-216-309-00	METAL CHIP	5.6	5%	1/10W
R183	1-216-309-00	METAL CHIP	5.6	5%	1/10W
R184	1-216-019-00	METAL CHIP	56	5%	1/10W
R188	1-216-019-00	METAL CHIP	56	5%	1/10W
R190	1-216-081-00	METAL CHIP	22K	5%	1/10W
R195	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R196	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R197	1-216-309-00	METAL CHIP	5.6	5%	1/10W
R198	1-216-309-00	METAL CHIP	5.6	5%	1/10W
R199	1-216-019-00	METAL CHIP	56	5%	1/10W
R200	1-216-037-00	METAL CHIP	330	5%	1/10W
R214	1-216-049-00	METAL CHIP	1K	5%	1/10W
R215	1-216-049-00	METAL CHIP	1K	5%	1/10W
R216	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R217	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R222	1-216-295-00	METAL CHIP	0	5%	1/10W
R223	1-216-295-00	METAL CHIP	0	5%	1/10W
R225	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R226	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R227	1-216-075-00	METAL CHIP	12K	5%	1/10W
R230	1-216-043-00	METAL CHIP	560	5%	1/10W
R231	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R232	1-216-043-00	METAL CHIP	560	5%	1/10W
R233	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R237	1-216-295-00	METAL CHIP	0	5%	1/10W
R241	1-216-073-00	METAL CHIP	10K	5%	1/10W
R242	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R243	1-216-081-00	METAL CHIP	22K	5%	1/10W
R245	1-216-295-00	METAL CHIP	0	5%	1/10W
R249	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R251	1-216-079-00	METAL CHIP	18K	5%	1/10W
R252	1-216-085-00	METAL CHIP	33K	5%	1/10W
R253	1-216-073-00	METAL CHIP	10K	5%	1/10W
R254	1-216-073-00	METAL CHIP	10K	5%	1/10W
R261	1-216-079-00	METAL CHIP	18K	5%	1/10W
R262	1-216-085-00	METAL CHIP	33K	5%	1/10W
R263	1-216-073-00	METAL CHIP	10K	5%	1/10W
R264	1-216-073-00	METAL CHIP	10K	5%	1/10W
R301	1-216-295-00	METAL CHIP	0	5%	1/10W
R302	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R303	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R304	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R305	1-216-097-00	METAL CHIP	100K	5%	1/10W
R306	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R307	1-216-065-00	METAL CHIP	4.7K	5%	1/10W

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Ref. No.	Part No.	Description	Remark		
R308	1-216-097-00	METAL CHIP	100K	5%	1/10W
R309	1-216-057-00	METAL GLAZE	2. 2K	5%	1/10W
R310	1-216-049-00	METAL CHIP	1K	5%	1/10W
R311	1-216-049-00	METAL CHIP	1K	5%	1/10W
R312	1-216-097-00	METAL CHIP	100K	5%	1/10W
R313	1-216-097-00	METAL CHIP	100K	5%	1/10W
R315	1-216-097-00	METAL CHIP	100K	5%	1/10W
R316	1-216-049-00	METAL CHIP	1K	5%	1/10W
R317	1-216-049-00	METAL CHIP	1K	5%	1/10W
R318	1-216-081-00	METAL CHIP	22K	5%	1/10W
R319	1-216-041-00	METAL CHIP	470	5%	1/10W
R320	1-216-057-00	METAL GLAZE	2. 2K	5%	1/10W
R321	1-216-089-91	METAL CHIP	47K	5%	1/10W
R322	1-216-053-00	METAL CHIP	1. 5K	5%	1/10W
R323	1-216-065-00	METAL CHIP	4. 7K	5%	1/10W
R324	1-216-085-00	METAL CHIP	33K	5%	1/10W
R326	1-216-057-91	METAL GLAZE	2. 2K	5%	1/10W
R327	1-216-295-00	METAL CHIP	0	5%	1/10W
R403	1-216-041-00	METAL CHIP	470	5%	1/10W
R404	1-216-043-00	METAL CHIP	560	5%	1/10W
R405	1-216-063-00	METAL CHIP	3. 9K	5%	1/10W
R406	1-216-041-00	METAL CHIP	470	5%	1/10W
R407	1-216-059-00	METAL CHIP	2. 7K	5%	1/10W
R408	1-216-041-00	METAL CHIP	470	5%	1/10W
R411	1-216-041-00	METAL CHIP	470	5%	1/10W
R412	1-216-049-00	METAL CHIP	1K	5%	1/10W
R413	1-216-031-00	METAL CHIP	180	5%	1/10W
R414	1-216-031-00	METAL CHIP	180	5%	1/10W
R416	1-216-033-00	METAL CHIP	220	5%	1/10W
R417	1-216-113-00	METAL CHIP	470K	5%	1/10W
R418	1-216-085-00	METAL CHIP	33K	5%	1/10W
R419	1-216-091-00	METAL CHIP	56K	5%	1/10W
R420	1-216-041-00	METAL CHIP	470	5%	1/10W
R421	1-216-049-00	METAL CHIP	1K	5%	1/10W
R422	1-216-059-00	METAL CHIP	2. 7K	5%	1/10W
R423	1-216-057-91	METAL GLAZE	2. 2K	5%	1/10W
R424	1-216-057-91	METAL GLAZE	2. 2K	5%	1/10W
R425	1-216-057-91	METAL GLAZE	2. 2K	5%	1/10W
R426	1-216-085-00	METAL CHIP	33K	5%	1/10W
R427	1-216-091-00	METAL CHIP	56K	5%	1/10W
R428	1-216-041-00	METAL CHIP	470	5%	1/10W
R429	1-216-049-00	METAL CHIP	1K	5%	1/10W
R430	1-216-049-00	METAL CHIP	1K	5%	1/10W
R431	1-216-057-91	METAL GLAZE	2. 2K	5%	1/10W
R432	1-216-057-91	METAL GLAZE	2. 2K	5%	1/10W
R433	1-216-041-00	METAL CHIP	470	5%	1/10W
R434	1-216-041-00	METAL CHIP	470	5%	1/10W
R435	1-216-057-91	METAL GLAZE	2. 2K	5%	1/10W
R439	1-216-121-00	METAL CHIP	1M	5%	1/10W

Ref. No.	Part No.	Description	Remark		
R440	1-216-053-00	METAL CHIP	1. 5K	5%	1/10W
R442	1-216-095-00	METAL CHIP	82K	5%	1/10W
R445	1-216-027-00	METAL CHIP	120	5%	1/10W
R446	1-216-121-00	METAL CHIP	1M	5%	1/10W
R448	1-216-053-00	METAL CHIP	1. 5K	5%	1/10W
R449	1-216-027-00	METAL CHIP	120	5%	1/10W
R450	1-216-095-00	METAL CHIP	82K	5%	1/10W
R453	1-216-295-00	METAL CHIP	0	5%	1/10W
R455	1-216-295-00	METAL CHIP	0	5%	1/10W
R457	1-216-049-00	METAL CHIP	1K	5%	1/10W
R458	1-216-049-00	METAL CHIP	1K	5%	1/10W
R459	1-216-043-00	METAL CHIP	560	5%	1/10W
R460	1-216-035-00	METAL CHIP	270	5%	1/10W
R461	1-216-043-00	METAL CHIP	560	5%	1/10W
R462	1-216-075-00	METAL CHIP	12K	5%	1/10W
R463	1-216-051-00	METAL CHIP	1. 2K	5%	1/10W
R464	1-216-083-00	METAL CHIP	27K	5%	1/10W
R465	1-216-049-00	METAL CHIP	1K	5%	1/10W
R466	1-216-049-00	METAL CHIP	1K	5%	1/10W
R467	1-216-049-00	METAL CHIP	1K	5%	1/10W
R468	1-216-049-00	METAL CHIP	1K	5%	1/10W
R469	1-216-057-91	METAL GLAZE	2. 2K	5%	1/10W
R470	1-216-049-00	METAL CHIP	1K	5%	1/10W
R471	1-216-049-00	METAL CHIP	1K	5%	1/10W
R472	1-216-081-00	METAL CHIP	22K	5%	1/10W
R473	1-216-085-00	METAL CHIP	33K	5%	1/10W
R474	1-216-049-00	METAL CHIP	1K	5%	1/10W
R475	1-216-049-00	METAL CHIP	1K	5%	1/10W
R476	1-216-065-00	METAL CHIP	4. 7K	5%	1/10W
R477	1-216-065-00	METAL CHIP	4. 7K	5%	1/10W
R478	1-216-041-00	METAL CHIP	470	5%	1/10W
R479	1-216-057-00	METAL GLAZE	2. 2K	5%	1/10W
R480	1-216-101-00	METAL CHIP	150K	5%	1/10W
R482	1-216-073-00	METAL CHIP	10K	5%	1/10W
R483	1-216-049-00	METAL CHIP	1K	5%	1/10W
R484	1-216-049-00	METAL CHIP	1K	5%	1/10W
R485	1-216-063-00	METAL CHIP	3. 9K	5%	1/10W
R486	1-216-063-00	METAL CHIP	3. 9K	5%	1/10W
R487	1-216-083-00	METAL CHIP	27K	5%	1/10W
R488	1-216-057-00	METAL GLAZE	2. 2K	5%	1/10W
R491	1-216-073-00	METAL CHIP	10K	5%	1/10W
R492	1-216-073-00	METAL CHIP	10K	5%	1/10W
R493	1-216-057-00	METAL GLAZE	2. 2K	5%	1/10W
R494	1-216-073-00	METAL CHIP	10K	5%	1/10W
R495	1-216-073-00	METAL CHIP	10K	5%	1/10W
R496	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R497	1-216-081-00	METAL CHIP	22K	5%	1/10W
R499	1-216-049-00	METAL CHIP	1K	5%	1/10W
R501	1-216-049-00	METAL CHIP	1K	5%	1/10W

Ref. No.	Part No.	Description	Remark		
R502	1-216-049-00	METAL CHIP	1K	5%	1/10W
R503	1-216-049-00	METAL CHIP	1K	5%	1/10W
R504	1-216-049-00	METAL CHIP	1K	5%	1/10W
R505	1-216-049-00	METAL CHIP	1K	5%	1/10W
R509	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R510	1-216-049-00	METAL CHIP	1K	5%	1/10W
R511	1-216-049-00	METAL CHIP	1K	5%	1/10W
R514	1-216-699-11	METAL CHIP	100K	0.5%	1/10W
R515	1-216-113-00	METAL CHIP	470K	5%	1/10W
R516	1-216-121-00	METAL CHIP	1M	5%	1/10W
R517	1-216-107-00	METAL CHIP	270K	5%	1/10W
R518	1-216-073-00	METAL CHIP	10K	5%	1/10W
R519	1-216-073-00	METAL CHIP	10K	5%	1/10W
R520	1-216-073-00	METAL CHIP	10K	5%	1/10W
R522	1-216-295-00	METAL CHIP	0	5%	1/10W
R525	1-216-655-11	METAL CHIP	1.5K	0.5%	1/10W
R526	1-216-651-11	METAL CHIP	1K	0.50%	1/10W
R527	1-216-665-11	METAL CHIP	3.9K	0.5%	1/10W
R528	1-216-667-11	METAL CHIP	4.7K	0.5%	1/10W
R529	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R530	1-216-079-00	METAL CHIP	18K	5%	1/10W
R531	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R532	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R533	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R534	1-216-057-91	METAL GLAZE	2.2K	5%	1/10W
R535	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R536	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R537	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R538	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R539	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R542	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R543	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R544	1-216-641-11	METAL CHIP	390	0.5%	1/10W
R545	1-216-643-11	METAL CHIP	470	0.5%	1/10W
R546	1-216-653-11	METAL CHIP	1.2K	0.5%	1/10W
R547	1-216-663-11	METAL CHIP	3.3K	0.5%	1/10W
R548	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R549	1-216-697-11	METAL CHIP	82K	0.50%	1/10W
R550	1-216-667-11	METAL CHIP	4.7K	0.5%	1/10W
R551	1-216-647-11	METAL CHIP	680	0.5%	1/10W
R552	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R553	1-216-663-11	METAL CHIP	3.3K	0.5%	1/10W
R555	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R556	1-216-031-00	METAL CHIP	180	5%	1/10W
R559	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R600	1-216-041-00	METAL CHIP	470	5%	1/10W
R601	1-216-081-00	METAL CHIP	22K	5%	1/10W
R602	1-216-085-00	METAL CHIP	33K	5%	1/10W
R603	1-216-025-00	METAL GLAZE	100	5%	1/10W

Ref. No.	Part No.	Description	Remark		
R604	1-216-049-00	METAL CHIP	1K	5%	1/10W
R605	1-216-049-00	METAL CHIP	1K	5%	1/10W
R606	1-216-025-00	METAL CHIP	100	5%	1/10W
R607	1-216-025-00	METAL CHIP	100	5%	1/10W
R608	1-216-081-00	METAL CHIP	22K	5%	1/10W
R609	1-216-085-00	METAL CHIP	33K	5%	1/10W
R610	1-216-073-00	METAL CHIP	10K	5%	1/10W
R611	1-216-073-00	METAL CHIP	10K	5%	1/10W
R612	1-216-041-00	METAL CHIP	470	5%	1/10W
R613	1-216-041-00	METAL CHIP	470	5%	1/10W
R615	1-216-295-00	METAL CHIP	0	5%	1/10W
R616	1-216-025-00	METAL CHIP	100	5%	1/10W
R617	1-216-073-00	METAL CHIP	10K	5%	1/10W
R618	1-216-073-00	METAL CHIP	10K	5%	1/10W
R619	1-216-049-00	METAL CHIP	1K	5%	1/10W
R620	1-216-049-00	METAL CHIP	1K	5%	1/10W
R621	1-216-049-00	METAL CHIP	1K	5%	1/10W
R622	1-216-079-00	METAL CHIP	18K	5%	1/10W
R623	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R624	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R625	1-216-081-00	METAL CHIP	22K	5%	1/10W
R626	1-216-049-00	METAL CHIP	1K	5%	1/10W
R627	1-216-037-00	METAL CHIP	330	5%	1/10W
R628	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R629	1-216-081-00	METAL CHIP	22K	5%	1/10W
R630	1-216-083-00	METAL CHIP	27K	5%	1/10W
R631	1-216-049-00	METAL CHIP	1K	5%	1/10W
R632	1-216-049-00	METAL CHIP	1K	5%	1/10W
R633	1-216-073-00	METAL CHIP	10K	5%	1/10W
R634	1-216-073-00	METAL CHIP	10K	5%	1/10W
R635	1-216-049-00	METAL CHIP	1K	5%	1/10W
R636	1-216-295-00	METAL CHIP	0	5%	1/10W
R638	1-216-041-00	METAL CHIP	470	5%	1/10W
R639	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R642	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R643	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R644	1-216-081-00	METAL CHIP	22K	5%	1/10W
R645	1-216-081-00	METAL CHIP	22K	5%	1/10W
R646	1-216-049-00	METAL CHIP	1K	5%	1/10W
R647	1-216-047-00	METAL CHIP	820	5%	1/10W
R648	1-216-049-00	METAL CHIP	1K	5%	1/10W
R649	1-216-029-00	METAL CHIP	150	5%	1/10W
R650	1-216-073-00	METAL CHIP	10K	5%	1/10W
R651	1-216-073-00	METAL CHIP	10K	5%	1/10W
R652	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R653	1-216-039-00	METAL CHIP	390	5%	1/10W
R654	1-216-031-00	METAL CHIP	180	5%	1/10W
R655	1-216-079-00	METAL CHIP	18K	5%	1/10W
R656	1-216-081-00	METAL CHIP	22K	5%	1/10W

Ref. No.	Part No.	Description	Remark		
R657	1-216-041-00	METAL CHIP	470	5%	1/10W
R658	1-216-041-00	METAL CHIP	470	5%	1/10W
R659	1-216-049-00	METAL CHIP	1K	5%	1/10W
R660	1-216-041-00	METAL CHIP	470	5%	1/10W
R662	1-216-081-00	METAL CHIP	22K	5%	1/10W
R663	1-216-081-00	METAL CHIP	22K	5%	1/10W
R664	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R665	1-216-041-00	METAL CHIP	470	5%	1/10W
R666	1-216-041-00	METAL CHIP	470	5%	1/10W
R667	1-216-073-00	METAL CHIP	10K	5%	1/10W
R668	1-216-035-00	METAL CHIP	270	5%	1/10W
R669	1-216-039-00	METAL CHIP	390	5%	1/10W
R670	1-216-073-00	METAL CHIP	10K	5%	1/10W
R671	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R700	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R701	1-216-049-00	METAL CHIP	1K	5%	1/10W
R702	1-216-073-00	METAL CHIP	10K	5%	1/10W
R703	1-216-073-00	METAL CHIP	10K	5%	1/10W
R704	1-216-037-00	METAL CHIP	330	5%	1/10W
R705	1-216-033-00	METAL CHIP	220	5%	1/10W
R706	1-216-029-00	METAL CHIP	150	5%	1/10W
R707	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R708	1-216-073-00	METAL CHIP	10K	5%	1/10W
R709	1-216-009-00	METAL CHIP	22	5%	1/10W
R710	1-216-077-00	METAL CHIP	15K	5%	1/10W
R712	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R713	1-216-041-00	METAL CHIP	470	5%	1/10W
R714	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R715	1-216-049-00	METAL CHIP	1K	5%	1/10W
R716	1-216-073-00	METAL CHIP	10K	5%	1/10W
R717	1-216-073-00	METAL CHIP	10K	5%	1/10W
R718	1-216-043-00	METAL CHIP	560	5%	1/10W
R719	1-216-037-00	METAL CHIP	330	5%	1/10W
R720	1-216-047-00	METAL CHIP	820	5%	1/10W
R721	1-216-073-00	METAL CHIP	10K	5%	1/10W
R722	1-216-073-00	METAL CHIP	10K	5%	1/10W
R723	1-216-049-00	METAL CHIP	1K	5%	1/10W
R724	1-216-083-00	METAL CHIP	27K	5%	1/10W
R725	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R727	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R729	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R730	1-216-073-00	METAL CHIP	10K	5%	1/10W
R731	1-216-073-00	METAL CHIP	10K	5%	1/10W
R732	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R733	1-216-043-00	METAL CHIP	560	5%	1/10W
R734	1-216-081-00	METAL CHIP	22K	5%	1/10W
R735	1-216-081-00	METAL CHIP	22K	5%	1/10W
R736	1-216-049-00	METAL CHIP	1K	5%	1/10W
R737	1-216-049-00	METAL CHIP	1K	5%	1/10W

Ref. No.	Part No.	Description	Remark		
R739	1-216-073-00	METAL CHIP	10K	5%	1/10W
R740	1-216-049-00	METAL CHIP	1K	5%	1/10W
R741	1-216-073-00	METAL CHIP	10K	5%	1/10W
R742	1-216-033-00	METAL CHIP	220	5%	1/10W
R744	1-216-029-00	METAL CHIP	150	5%	1/10W
R745	1-216-035-00	METAL CHIP	270	5%	1/10W
R746	1-216-037-00	METAL CHIP	330	5%	1/10W
R747	1-216-073-00	METAL CHIP	10K	5%	1/10W
R748	1-216-083-00	METAL CHIP	27K	5%	1/10W
R749	1-216-037-00	METAL CHIP	330	5%	1/10W
R750	1-216-047-00	METAL CHIP	820	5%	1/10W
R751	1-216-049-00	METAL CHIP	1K	5%	1/10W
R752	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R753	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R754	1-216-085-00	METAL CHIP	33K	5%	1/10W
R755	1-216-073-00	METAL CHIP	10K	5%	1/10W
R756	1-216-073-00	METAL CHIP	10K	5%	1/10W
R757	1-216-083-00	METAL CHIP	27K	5%	1/10W
R758	1-216-073-00	METAL CHIP	10K	5%	1/10W
R759	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R760	1-216-083-00	METAL CHIP	27K	5%	1/10W
R763	1-216-049-00	METAL CHIP	1K	5%	1/10W
R764	1-216-049-00	METAL CHIP	1K	5%	1/10W
R765	1-216-049-00	METAL CHIP	1K	5%	1/10W
R766	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R767	1-216-035-00	METAL CHIP	270	5%	1/10W
R768	1-216-035-00	METAL CHIP	270	5%	1/10W
R769	1-216-295-00	METAL CHIP	0	5%	1/10W
R770	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R771	1-216-049-00	METAL CHIP	1K	5%	1/10W
R772	1-216-045-00	METAL CHIP	680	5%	1/10W
R773	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R774	1-216-041-00	METAL CHIP	470	5%	1/10W
R775	1-216-049-00	METAL CHIP	1K	5%	1/10W
R776	1-216-041-00	METAL CHIP	470	5%	1/10W
R777	1-216-041-00	METAL CHIP	470	5%	1/10W
R778	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R779	1-216-081-00	METAL CHIP	22K	5%	1/10W
R780	1-216-073-00	METAL CHIP	10K	5%	1/10W
R781	1-216-033-00	METAL CHIP	220	5%	1/10W
R782	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R783	1-216-039-00	METAL CHIP	390	5%	1/10W
R784	1-216-035-00	METAL CHIP	270	5%	1/10W
R785	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R786	1-216-009-00	METAL CHIP	22	5%	1/10W
R787	1-216-073-00	METAL CHIP	10K	5%	1/10W
R788	1-216-073-00	METAL CHIP	10K	5%	1/10W
R789	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R790	1-216-073-00	METAL CHIP	10K	5%	1/10W

Ref. No.	Part No.	Description	Remark			
R793	1-216-057-00	METAL GLAZE	2. 2K	5%	1/10W	
R794	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R795	1-216-053-00	METAL CHIP	1. 5K	5%	1/10W	
R796	1-216-041-00	METAL CHIP	470	5%	1/10W	
R797	1-216-043-00	METAL CHIP	560	5%	1/10W	
R800	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R801	1-216-065-00	METAL CHIP	4. 7K	5%	1/10W	
R802	1-216-043-00	METAL CHIP	560	5%	1/10W	
R803	1-216-057-00	METAL GLAZE	2. 2K	5%	1/10W	
R804	1-216-057-00	METAL GLAZE	2. 2K	5%	1/10W	
R805	1-216-047-00	METAL CHIP	820	5%	1/10W	
R806	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R807	1-216-069-00	METAL CHIP	6. 8K	5%	1/10W	
R809	1-216-689-00	METAL CHIP	39K	5%	1/10W	
R810	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R811	1-216-063-00	METAL CHIP	3. 9K	5%	1/10W	
R812	1-216-057-00	METAL CHIP	2. 2K	5%	1/10W	
R813	1-216-043-00	METAL CHIP	560	5%	1/10W	
R814	1-216-065-00	METAL CHIP	4. 7K	5%	1/10W	
R815	1-216-051-00	METAL CHIP	1. 2K	5%	1/10W	
R816	1-216-051-00	METAL CHIP	1. 2K	5%	1/10W	
R817	1-216-051-00	METAL CHIP	1. 2K	5%	1/10W	
R819	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R820	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R821	1-216-041-00	METAL CHIP	470	5%	1/10W	
R822	1-216-041-00	METAL CHIP	470	5%	1/10W	
R823	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R824	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R825	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R827	1-216-057-00	METAL GLAZE	2. 2K	5%	1/10W	
R830	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R831	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R832	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R833	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R838	1-216-295-00	METAL CHIP	0	5%	1/10W	
R839	1-216-061-00	METAL CHIP	3. 3K	5%	1/10W	
R851	1-216-061-00	METAL CHIP	3. 3K	5%	1/10W	
R852	1-216-699-11	METAL CHIP	100K	0. 5%	1/10W	
R853	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R854	1-216-063-00	METAL CHIP	3. 9K	5%	1/10W	
R855	1-216-067-00	METAL CHIP	5. 6K	5%	1/10W	
R857	1-216-061-00	METAL CHIP	3. 3K	5%	1/10W	
R860	1-216-057-00	METAL GLAZE	2. 2K	5%	1/10W	
R861	1-216-041-00	METAL CHIP	470	5%	1/10W	
R862	1-216-067-00	METAL CHIP	5. 6K	5%	1/10W	
R863	1-216-065-00	METAL CHIP	4. 7K	5%	1/10W	
R864	1-216-065-00	METAL CHIP	4. 7K	5%	1/10W	
R865	1-216-067-00	METAL CHIP	5. 6K	5%	1/10W	
R872	1-216-025-00	METAL CHIP	100	5%	1/10W	

Ref. No.	Part No.	Description	Remark			
R874	1-216-055-00	METAL CHIP	1. 8K	5%	1/10W	
R875	1-216-055-00	METAL CHIP	1. 8K	5%	1/10W	
R876	1-216-051-00	METAL CHIP	1. 2K	5%	1/10W	
R878	1-216-055-00	METAL CHIP	1. 8K	5%	1/10W	
R879	1-216-041-00	METAL CHIP	470	5%	1/10W	
R880	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R881	1-216-059-00	METAL CHIP	2. 7K	5%	1/10W	
R883	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R884	1-216-295-00	METAL CHIP	0	5%	1/10W	
R885	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R888	1-216-065-00	METAL CHIP	4. 7K	5%	1/10W	
R889	1-216-065-00	METAL CHIP	4. 7K	5%	1/10W	
R890	1-216-041-00	METAL CHIP	470	5%	1/10W	
R892	1-216-039-00	METAL CHIP	390	5%	1/10W	
R896	1-216-051-00	METAL CHIP	1. 2K	5%	1/10W	
R897	1-216-041-00	METAL CHIP	470	5%	1/10W	
R898	1-216-051-00	METAL CHIP	1. 2K	5%	1/10W	
R899	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R901	1-216-043-00	METAL CHIP	560	5%	1/10W	
R902	1-216-045-00	METAL CHIP	680	5%	1/10W	
R903	1-216-043-00	METAL CHIP	560	5%	1/10W	
< VARIABLE RESISTOR >						
RV101	1-238-852-11	RES, ADJ, CERMET	470			
RV102	1-238-852-11	RES, ADJ, CERMET	470			
RV301	1-238-856-11	RES, ADJ, CERMET	10K			
RV303	1-238-855-11	RES, ADJ, CERMET	4. 7K			
RV601	1-238-853-11	RES, ADJ, CERMET	1K			
RV611	1-238-854-11	RES, ADJ, CERMET	2. 2K			
RV612	1-238-854-11	RES, ADJ, CERMET	2. 2K			
RV613	1-238-853-11	RES, ADJ, CERMET	1K			
RV614	1-238-853-11	RES, ADJ, CERMET	1K			
RV615	1-238-852-11	RES, ADJ, CERMET	470			
RV617	1-238-852-11	RES, ADJ, CERMET	470			
RV618	1-238-857-11	RES, ADJ, CERMET	22K			
RV620	1-238-858-11	RES, ADJ, CERMET	47K			
RV621	1-238-857-11	RES, ADJ, CERMET	22K			
RV622	1-238-857-11	RES, ADJ, CERMET	22K			
RV623	1-238-855-11	RES, ADJ, CERMET	4. 7K			
RV624	1-238-855-11	RES, ADJ, CERMET	4. 7K			
RV625	1-238-855-11	RES, ADJ, CERMET	4. 7K			
RV802	1-238-854-11	RES, ADJ, CERMET	2. 2K			
RV803	1-238-854-11	RES, ADJ, CERMET	2. 2K			
RV804	1-238-854-11	RES, ADJ, CERMET	2. 2K			
RV821	1-238-853-11	RES, ADJ, CERMET	1K			
< VIBRATOR >						
X801	1-577-117-21	OSCILLATOR, CRYSTAL	(4. 433619MHz)			

Ref. No.	Part No.	Description	Remark
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MISCELLANEOUS

52	1-569-346-11	CONNECTOR, FPC (TRANSLATION) 10P	
53	1-643-189-11	FP-503 FLEXIBLE BOARD	
△102	9-903-247-01	AC INLET 2P (250V/2.5V)	
△F101	9-903-925-01	FUSE, TIMER-LAG (250V/2A)	
M901	A-7048-691-A	DRUM ASSY (DGU-0A8A-R)	
M902	8-835-331-01	MOTOR, DC U-22A (CAPSTAN)	
M903	A-7040-324-A	MOTOR ASSY (N), THREADING (LOADING)	
M904	X-3731-108-1	FL MOTOR ASSY	

ACCESSORIES & PACKING MATERIALS

	1-467-302-11	REMOTE COMMANDER (RMT-V124C)	
△	1-574-056-11	CORD, POWER (AEP)	
	1-575-334-11	CORD (WITH CONNECTOR) (AV CABLE)	
△	1-590-866-11	CORD, POWER (UK)	
	3-757-506-11	MANUAL, INSTRUCTION (ENGLISH)	
	3-757-506-41	MANUAL, INSTRUCTION (GERMAN, FRENCH, SPANISH) (AEP)	
	3-757-506-51	MANUAL, INSTRUCTION (DUTCH, SWEDISH, ITALIAN) (AEP)	
*	3-947-296-91	INDIVIDUAL CARTON	
*	3-947-297-01	CUSHION (RIGHT)	
*	3-947-298-01	CUSHION (LEFT)	

HARDWARE LIST

#1	7-627-553-37	SCREW (M2X3), SPECIAL HEAD
#2	7-627-555-88	SCREW (M1.4X1.8)
#3	7-621-772-10	SCREW +B 2X4
#4	7-627-553-68	SCREW, PRECISION +P 2X6 TYPE3
#5	7-685-647-79	SCREW +BVTP 3X10 TYPE2

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

SECTION 8 SERVICE MODE

☆ This unit uses the EVR (Electronic Variable Resistor) for performing adjustments and tests. These functions are implemented by the SENSER LANC system.

8-1. SENSER LANC

SENSER LANC is the LANC format designed to perform EVR (electronic variable resistor) adjustments and various tests for this 8mm VTR by using the LANC (Control L). The SENSER LANC is synonymous with the old SERVICE LANC. But there have been enhancements and the SENSER LANC is now used as a unified word.

8-2. HOW TO USE THE RM-95 JIG (ADJUSTMENT REMOTE CONTROL)

The RM-95 jig is used to operate the SENSER LANC. This jig will create the SENSER LANC Mode. Because of this, the HOLD switch has been modified for service purpose.

Note that the old models of the RM-95 have no page display function and it is needed to replace their microcomputers within these old models.

Old	UPD7503G-A71-12 UPD7503G-C23-12	8-759-142-56 8-759-146-77	No Page display (The microcomputer must be replaced.)
New	UPD7503G-C56-12	8-759-148-35	Page display

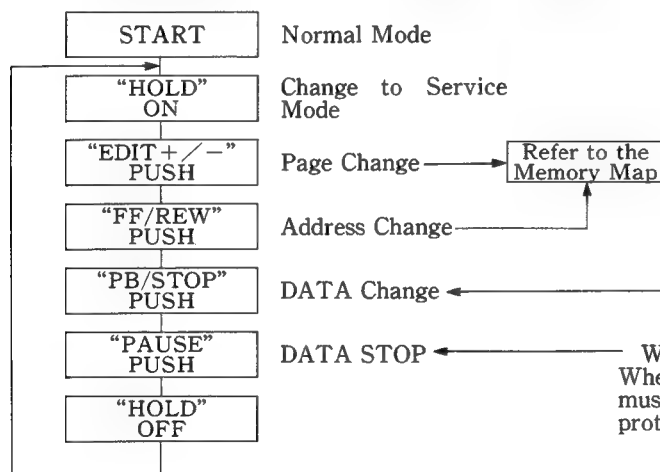
LCD Display of RM-95

Example

Page Data Address

This means that the data on page 1, address 3D is 37.

8-3. HOW TO CHANGE THE SERVICE MODE WITH RM-95



LCD Display
(Hexadecimal
form)
P : DD : AA
(F : 00 : 00)

Display Data

The data at the selected address will be displayed. The page entered first from Normal mode is 0.

P : 00 : 00

If a selected page is not incorporated, the preset data value will be indefinite. When a change is made within an incorporated page, the address will remain intact.

P : DD : AA

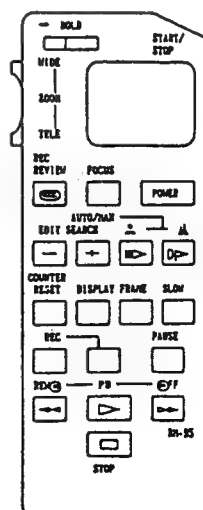
<When ADJ Data Has Been Changed>

The EVR value (RAM) will be renewed by changed data. (This data will not be written to EE PROM.)

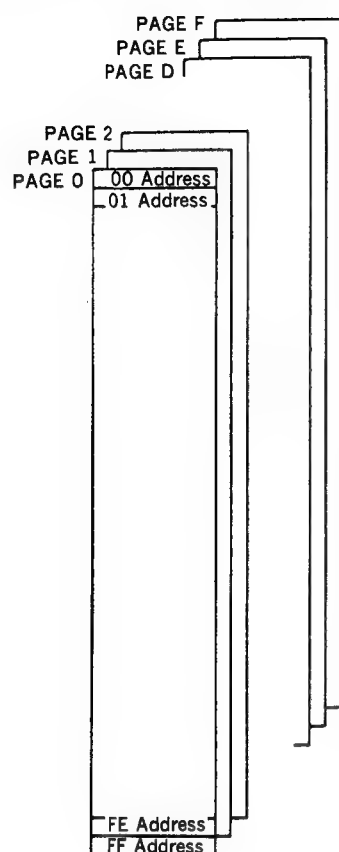
Write to EE PROM.
When writing changed data to EEPROM, WRITE PROTECT must be released before it cannot be written. To release this protect, the data on page 0, address 00 must be set to 01 first.

RM-95 (J-6082-053-B)

Command	Action	RM-95 Control Button Pushed
Page Up	Page + 1	Edit Search +
Page Down	Page - 1	Edit Search -
Direct Page Set	Sets to specified page.	Event Clear
Address Up	Address + 1	Fast Forward
Address Down	Address - 1	Rewind
Data Up	Data + 1	Play Back
Data Down	Data - 1	Stop
Store	Writes data to EEPROM. RAM	Pause



8-4. SENSER LANC MEMORY MAP



This unit has pages 0 to F allocated as listed below.

PAGE	Page Allocation
0	Service
1	
2	System Controler
3	System Controler
4	System Controler
5	
6	
7	Timer/Tuner Controler
8	Timer/Tuner Controler
9	Timer/Tuner Controler
A	
B	
C	
D	
E	
F	

Note : This set has no EE-PROM built-in and so it has no "D page"

8-5. TEST MODE SETTING

Variety of test modes are established and changed as listed below.

Page 0	Address 02
--------	------------

Data	Function
00	Normal
01	Test Mode 1 Various Emergencies, Inhibit and Release Drum, Capstan, Loading Motor, Reel, Tape Top and End, DEW SP/LP Automatic Discrimination Inhibit, Manual Changeover
02	Test Mode 2 • Playback Frequency Characteristic 1'ch Adjustment With the ATF servo shifted one track, playback tape and allow taking RF on 1 channel. (This is valid only in playback mode.) SP/LP is protected from being distinguished and REC SP/LP followed.
03	Test Mode 3 Track Shift Playback • With a forward shift of 1/3 to 1/4 track, playback tape. (This is valid only in playback mode.) SP/LP is protected from being distinguished and REC SP/LP is followed.

* After completing necessary adjustments/repairs, be sure to return the data at this address to 00.

8-6. EMERGENCY CODES

These codes can be used to check the condition of failure (abnormality) that occurred.

Page 0	Address 07
--------	------------

Last Emergency Code

.... The code of the last failure that occurred (This data will be renewed each time a failure occurs.

* When the RESET button on the main body is pressed and when the AC power is disconnected, the emergency code data will be reset to "00".

Code	Condition of Failure
00	No Failure
01	Loading Motor Failure
02	Reel Failure during Unloading
03	Reel Failure during operation other than unloading
04	Capstan Failure
05	FG Failure at Start of Drum
06	PG no Failure at Start of Drum
07	FG Failure when Drum is Stationary
08	FG Failure at Start of Drum during loading
09	PG no Failure at Start of Drum during loading
0A	FG Failure when Drum is Stationary during loading
0B	FG Failure at Start of Drum during unloading
0C	PG no Failure at Start of Drum during unloading
0D	FG Failure when Drum is Stationary during unloading

8-7. EMERGENCY MODE

This mode allows you to check the mode of operation in which the VTR was placed when failure occurred.

Page 0	Address 09
--------	------------

Last Emergency Code

....The code of the last failure that occurred
(This data will be renewed each time a failure occurs.)

*When the RESET button on the main body is pressed and when the AC power is disconnected, the emergency code data will be reset to "00".

Code	Condition of Failure
10	EJECTED
20	STOP
26	STOP TAPE END
27	STOP TAPE TOP
29	STOP ZERO
30	FF
33	FF ZERO PB
34	FF ZERO STOP
38	REW
3A	REW PB
3B	REW ZERO PB
3C	REW ZERO STOP
40	REC
41	REC PAUSE
42	TIMER REC
43	TIMER REC PAUSE
48	A INSERT
49	A INSERT PAUSE
60	PB
62	+1
63	-1
64	CUE
65	REVIEW
66	+2
67	-1
68	LOCKED CUE
69	LOCKED REVIEW

Code	Condition of Failure
70	+STILL
71	-STILL
72	+SLOW, +SLOW 1/5
73	-SLOW, -SLOW 1/5
74	+SLOW 1/10
75	-SLOW 1/10
76	+FRAME
77	-FRAME

8-8. RF SWITCHING POSITION ADJUSTMENT MODE

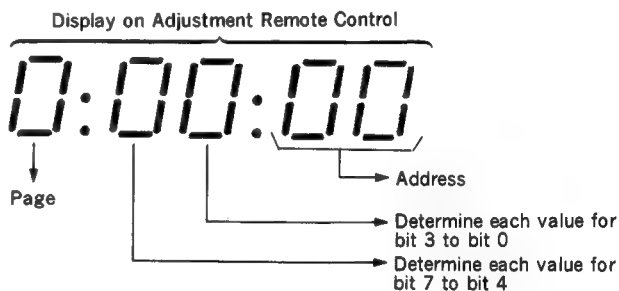
When adjusting the RF switching position, set up as follows :

Page 7	Address 80
--------	------------

Data	Function
00	Normal
05	Switching position adjustment mode

8-9. DETERMINATION OF BIT VALUE

For the following items, the data displayed on the adjustment remote control is used to determine the bit value. The list below should be checked to determine whether the bit value is "1" or "0".



Display on Remote Control	Bit Value			
	bit3 or bit7	bit2 or bit6	bit1 or bit5	bit0 or bit4
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
⑧ → 8	1	0	0	0

Display on Remote Control	Bit Value			
	bit3 or bit7	bit2 or bit6	bit1 or bit5	bit0 or bit4
9	1	0	0	1
A (A)	1	0	1	0
B (B)	1	0	1	1
C (C)	1	1	0	0
D (D)	1	1	0	1
Ⓔ→ E (E)	1	1	1	0
F (F)	1	1	1	1

(Example) If the data displayed on the remote control is “8E”, the values for bit 7 to bit 4 can be determined from the values in the column ④. The value for bit 3 to bit 0 can be determined from the values in the column ⑤.

8-10. 0 PAGE MEMORY MAP

Adjustment Address	Contents	Remarks
00	Not used	
01	Not used	
02	Test Mode (COSMO)	
03	Switching Position Data (LOW)	Read only
04	Switching Position Data (HIGH)	Read only
05		
06		
07	Emergency Code (LAST)	
08		
09	Emergency Mode (LAST)	
0A		
0B		
0C		
0D		
0E		
0F		

SECTION 9

INTERFACE AND IC PIN FUNCTION

9-1. SYSTEM CONTROL — VIDEO · AUDIO BLOCK INTERFACE (SS-155 BOARD)

Signal	Pin No.	I/O	VTR MODE													
			STOP	FF	REW	×2	-×2	PB	PICTURE SEARCH		PB・PAUSE	SLOW	REVERSE SLOW	REC	REC PAUSE	
									CUE	REVIEW						
SP/LP	IC002 ⑧	O	*1	H	H	*1	*2	*2	*2	*2	*2	*1	*1	*1	*11	H/L
V PB MODE	IC002 ⑩	O	L	L	L	H	H	H	H	H	H	H	H	H	L	L
JOG VD	IC002 ②	O	L	L	L	*3	*3	*3	*3	L	*3	*3	*3	*3	L	L
RP PB MODE	IC002 ⑤	O	L	L	L	L	L	L	L	L	L	L	L	L	H	L
FE ON	IC002 ⑥	O	H	H	H	H	H	H	H	H	H	H	H	H	L	H
HEAD CHANGE	IC002 ①	O	L	L	L	*4	*4	*4	*4	L	L	*4	*4	*4	L	L
VI SWP	IC002 ⑩	O	L	*6	*6	*5	*5	*5	*5	*6	*6	*5	*5	*5	*6	*6
RF SWP	IC002 ⑨	O	L	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6
JOG	IC002 ④	O	L	L	L	H	H	H	H	L	H	H	H	H	L	L
SP/LP DET	IC002 ⑦	I	L	*7	*7	*7	*7	*7	*7	L	*7	*7	—	—	H	H
CLOG DET	IC002 ⑥	I	H	*8	*8	*8	*8	*8	*8	*8	*8	*8	*8	*8	H	*8
COMP SYNC	IC002 ⑥	I	*9	*9	*9	*9	*9	*9	*9	*9	*9	*9	*9	*9	*9	*9
AUDIO PB	IC002 ⑧	O	L	L	L	*10	*10	*10	*10	H	*10	*10	*10	*10	L	L
AU MUTE	IC002 ⑩	O	L	L	L	L	H	H	H	L	H	H	H	H	L	L
VIDEO CS	IC002 ⑨	O	V-cycle“Low”pulse													
SO BUS	IC002 ⑤	O	V-cycle pulse rank													
SCK	IC002 ⑦	O	V-cycle“Low”pulse rank													

- * 1. This outputs the result of determining what was the previous mode.
- * 2. "High" output in SP mode, "Low" output in LP mode.
- * 3. This outputs the result of determining which record mode the playback tape has.
- * 4. Pseudo VD signal
- * 5. "High" when the HEAD for special playback is selected.
- * 6. Output pulse to supply the OR of HEAD CHANGE and RF SWP.
- * 7. Pulse of 25Hz, 50% duty (synchronized with the rotation of the drum).
- * 8. "High" at the SP record portion and "Low" at the LP record portion of tape.
- * 9. "High" at the blank portion or at any drop out portion of tape.
- * 10. Head clogging detection input.
- * 11. Composite synch signal input separated from line input video signal, camera video signal or playback video signal. (This signal has positive polarity).
- * 12. "Low" during shuttle editing from REC PAUSE, "High" while in any other mode.
- * 13. This varies according to SP/LP switching. It becomes "High" when SP mode is entered and "Low" when LP mode is entered.

9-2. MECHANICAL CONTROL — SERVO BLOCK INTERFACE (SS-155 BOARD)

Signal	Pin No.	I/O	VTR MODE													
			STOP	FF	REW	×2	- ×2	PB	PICTURE SEARCH		PB • PAUSE	SLOW	REVERSE SLOW	REC	REC PAUSE	
									CUE	REVIEW						
T.REEL FG	IC002 ⑤7	I	—	*1	*1	*1	*1	*1	*1	*1	—	*1	*1	*1	*1	—
S.REEL FG	IC002 ⑤8	I	—	*1	*1	*1	*1	*1	*1	*1	—	*1	*1	*1	*1	—
ATF ERROR	IC002 ⑥1	I	—	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2
DRUM PG	IC002 ⑥8	I	—	*3	*3	*3	*3	*3	*3	*3	*3	*3	*3	*3	*3	*3
DRUM FG	IC002 ⑥9	I	—	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4
CAP FG/HMS CAP FG	IC002 ⑦0 ⑦⑦	I	—	*5	*5	*5	*5	*5	*5	*5	—	*5	*5	*5	*5	—
CAP ON	IC002 ④1	O	L	H	H	H	H	H	H	H	L	L	*8	H	L	L
REF PILOT	IC002 ④5	O	*7	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6
RP PB MODE	IC002 ⑤	O	L	L	L	L	L	L	L	L	L	L	L	L	L	L
DRUM FWD/RVS * 11	IC002 ⑥6	O	H	H	H	H	H	H	H	H	H	H	H	H	H	H
CAP FWD/RVS	IC002 ④2	O	L	H	L	H	L	H	L	H	L	L	*8	*9	H	L
DRUM ERR	IC002 ⑦3	O	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10
CAP ERR	IC002 ⑦5	O	L	*10	*10	*10	*10	*10	*10	*10	L	L	*10	*10	*10	L
DRUM ON *12	IC002 ⑦2	O	L	H	H	H	H	H	H	H	H	H	H	H	H	H

* 1. The amplitude modulated pulse is input by the rotation of the reel.

(200msec period during REC/PB mode)

* 2. ATF error voltage input.

* 3. One PG pulse is input by one rotation of the drum. Approximately 25Hz.

* 4. Six FG pulses are input by one rotation of the drum. Approximately 150Hz.

* 5. 520 FG pulses are input by one rotation of the capstan. Approximately 1325Hz during REC/PB (SP) mode.

* 6. Four frequencies are output as synchronized with the rotation of the drum.

f1 = 101.02kHz, f2 = 117.19kHz, f3 = 162.76kHz, f4 = 146.48kHz

* 7. f2 (117.19kHz) is output.

* 8. "High" pulse when tape is delivered.

* 9. "Low" pulse when tape is delivered.

* 10. PWM signal with a period of 21.5 μ sec.

* 11. Normally "High". Temporarily "Low" when a full top cassette is loaded (drum reverse rotation).

* 12. The "High" level is at approximately 1.3Vdc.

9-3. MECHANICAL CONTROL MICROCOMPUTER CXP80624 (SS-155 BOARD IC002) PORT FUNCTION DESCRIPTION

Pin No.	Signal	I/O	Function
1	HEAD CHG	O	HEAD CHANGE Signal.
2	JOG VD	O	Pseudo VD signal to be inserted into playback video signal when speed change playback is performed.
3	N. C.	—	Not used.
4	JOG	O	Speed change playback/normal playback select signal for the video circuit. "High" to select speed change playback.
5	RP PB MODE	O	REC/PB select signal for REC/PB amplifier (RP-183 board IC001) and ATF servo IC (SS-155 board IC003). "Low" to select PB mode.
6	FE ON	O	Flying erase oscillation ON/OFF control signal. "Low" to activate the oscillation.
7	INT VD OUT	O	Timing reference for serial data communication. V-cycle "Low" pulse.
8	SP/LP	O	SP/LP select signal. "Low" to select LP.
9	VIDEO CS	O	Serial data communication chip select signal to the video IC. V-cycle "Low" pulse.
10	VA PB MODE	O	REC/PB select signal for the video circuit. "High" for PB mode.
11	MACRO DET	I	Not used.
12	10/7 SW	I	Not used.
13	EDIT	O	Video circuit characteristic select signal.
14	VIRS	O	Teletext aria mask circuit.
15	ME/MP SW	I	ME/MP switch input. "Low" for MP, "High" for ME.
16	MP/HG SW	I	MP/HG switch input. "Low" for MP, "High" for HG.
17	REC PROOF SW	I	REC PROOF switch input. "High" for protected REC.
18	MODE SW 2	I	Mechanical deck MATRIX input.
19	MODE SW 1	I	Mechanical deck MATRIX input.
20	MODE SW 0	I	Mechanical deck MATRIX input.
21	CC DOWN SW	I	Cassette compartment clock switch input. "Low" for lock.
22	10/13 SW	I	Not used.
23	CAP GAIN UP	O	Capstan speed control signal ("High" during FF/REW mode).
24	LOAD	O	Loading motor control signal. "High" or "High" pulse output to allow loading.
25	UNLOAD	O	Loading motor control signal. "High" or "High" pulse output to allow unloading.
26	FL M LOAD	O	Front loading motor control signal. "High" or "High" pulse output to allow loading.
27	FL M UNLD	O	Front loading motor control signal. "High" or "High" pulse output to allow unloading.
28	N. C.	—	Not used.
29	VI MUTE	O	Video mute signal.
30	AUDIO MUTE	O	Audio mute signal.
31	N. C.	—	Not used.
32	N. C.	—	Not used.
33	COPY	O	Not used.
34	CAM POS	O	Voice boost select signal. "Low" to turn on.
35	PAL V	O	Not used.
36	H18/NORMAL	O	H18/NORMAL select signal (On play, Auto).
37	N. C.	—	Not used.
38	TOP END LED	O	ON/OFF signal for TAPE TOP/END LED.

Pin No.	Signal	I/O	Function
39	MP	—	Connected to GND.
40	COSMO RESET	I	Reset signal. "Low" to reset.
41	VSS	—	GND
42	XTAL	O	11.718MHz clock oscillation circuit.
43	EXTAL	I	
44	COSMO CS	I	Clip select signal from the mode control microcomputer. V-cycle "Low" pulse.
45	SERIAL IN	I	Serial date input.
46	SERIAL OUT	O	Serial date output.
47	SCK	O	Serial clock output.
48	ME/MP	O	ME/MP select signal output. "Low" when MP Tape is used.
49	N. C.	—	GND
50	INSEL 1	O	Not used.
51	INSEL 2	O	Not used.
52	A VSS	—	GND
53	AVREF	—	Analog board reference voltage. Connected to +5V.
54	AVDD	—	Analog board power (+5V).
55	TOP SENS	I	Tape top sensing signal. This is normally "Low" and switches to "High" pulse input at tape top.
56	END SENS	I	Tape end sensing signal. This is normally "Low" and switches to "High" pulse input at tape end.
57	T REEL FG	I	T reel FG signal input.
58	S REEL FG	I	S reel FG signal input.
59	H18 DET	I	Video H18 discrimination signal input.
60	AFM MODE DET	I	Audio multiplex discrimination input.
61	ATF ERROR	I	ATF error, ATF lock error input.
62	S SW 3	I	Not used.
63	S SW 1	I	S terminal switch detection input. "Low" for S terminal input.
64	S SW 2	I	Not used.
65	CLOG DET	I	This determines whether playback RF is present or not. "Low" under normal condition.
66	COMP SYNC	I	Composite sync signal separated from record/playback Y signal.
67	SP/LP DET	I	This determines which record mode the playback tape has when CUE/REVIEW/FF/REW mode is entered.
68	DRUM PG	I	Drum PG signal input. Used for the drum phase servo. 40msec periodic "High" pulse.
69	DRUM FG	I	Drum FG signal input. Used for the drum speed servo. 6.7msec periodic pulse.
70	CAP FG	I	Capstan FG signal input. Approximately 1325Hz during REC/PB mode for the capstan speed servo.
71	N. C.	—	+5V power.
72	DRUM ON	O	Not used.
73	CAP ERR H	O	Not used.
74	DRUM ERR	O	Drum error signal output.
75	CAP ERR	O	Capstan error signal output. 20.15μsec PWM signal.
76	DRUM FWD/RVS	O	Drum rotational direction control signal. Normally "Low".

Pin No.	Signal	I/O	Function
77	HMS CAP FG	O	Capstan FG signal input. Used tape counter.
78	N. C.	I	+5V power.
79	MPHG/MP	O	Not used.
80	S/VIDEO	O	Not used.
81	N. C.	—	Not used.
82	AFM OUTSEL	O	L/R select signal.
83	AFM MODE	O	Audio multiplex discrimination output.
84	AUDIO PB	O	REC/PB select signal for the audio circuit. "High" for PB mode.
85	REF PILOT	O	Reference pilot signal for the ATF servo. Four frequencies are selectively switched from one to another as synchronized with the rotation of the drum. $f_1 = 101.02\text{kHz}$, $f_2 = 117.19\text{kHz}$, $f_3 = 162.76\text{kHz}$, $f_4 = 146.48\text{kHz}$.
86	N. C.	—	N. C.
87	N. C.	—	Connected to GND.
88	VSS	—	GND.
89	VDD	—	+5V power.
90	VPP	—	+5V power.
91	CAP ON	O	Capstan driver ON/OFF control signal. "High" to turn capstan ON.
92	CAP FWD/RVS	O	Capstan rotational direction control signal. "High" for FWD. "Low" for RVS.
93	DRUM ACCEL	O	Drum acceleration pulse.
94	DRUM BRAKE	O	Drum deceleration pulse.
95	PCM AFREC	O	Not used.
96	PCM REC INH	O	Not used.
97	FE RA	O	Not used.
98	PCM PB	O	Not used.
99	RF SWP	O	RF switching pulse signal. 25Hz, 50% duty pulse.
100	VI SWP	O	Video switching pulse.

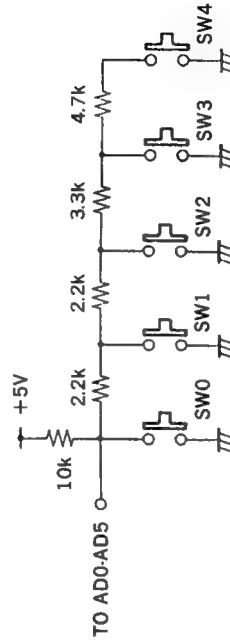
9-4. MODE CONTROL MICRO COMPUTER MB89092 OR MB89093 (LC-46 BOARD IC101) PORT FUNCTION DESCRIPTION

Pin No.	Signal	I/O	Function
1	TEST MODE 1	I	Connected to GND.
2	TEST MODE 2	I	Connected to GND.
3	X0		System clock (10MHz).
4	X1		System clock (10MHz).
5	VSS	I	+5V power.
6	RESET	I	Reset input.
7	PAL/NT	I	PAL/NTSC select. "Low" for NTSC.
8	AEP/UC	I	AEP/UC select. "Low" for UC.
9-15	N.C.	I	No connect.
16	INT V	I	V synchronization signal input.
17	LANC POWER CONT	O	"Low" output when power off, LANC M.
18	LANC POWER ON	I	LANC POWER control signal input.
19-22	N.C.	I	No connect.
23	MAIN LED	O	Not used.
24	SUB LED	O	Not used.
25	N.C.	O	No connect.
26	—	I	Connected to VCC.
27	N.C.	I	No connect.
28	SP DATA	O	Sift register. Data output.
29	SP CLK	O	Sift register. Clock output.
30	SIRCS IN	I	SIRCS input.
31	SP STR	O	Sift register. Strobe output.
32	SP OE	O	Sift register. OE output.
33-46	N.C.	I	No connect.
47	VCC	I	+5V power.
48-55	S0-S7	O	LCD display SEGMENT signal output. 0-7
56	VSS	—	GND
57-64	S8-S15	O	LCD display SEGMENT signal output. 8-15
65-68	V3-V0	I	LCD drive power terminal.
69-71	C0-C2	O	LCD display common signal. 0-2
72	—	O	No connect.
73	N.C.	—	No connect.
74	COSMO CS	O	Serial communication BUS.
75	TT SI	I	Serial communication BUS.
76	TT SO	O	Serial communication BUS.
77	TT SCK	O	Serial communication BUS.
78	COSMO RST	O	Serial communication BUS.
79	N.C.	—	No connect.
80	N.C.	—	No connect.
81	AVSS	—	Analog GND.
82-86	AD0-AD4	I	KEY input.
87	LANC S/M	I	LANC mode slave/master select. "Low" for slave.

Pin No.	Signal	I/O	Function
88	AD6	I	Not used.
89	RF SW POS1	I	RF SWP position adjustment VR1 input.
90	AVCC	—	Analog power.
91	RF SW POS2	I	RF SWP position adjustment VR2 input.
92	x2 ON	O	Not used.
93	TV/VTR	O	TV/VTR ANT select. "H" when VTR.
94	POWER ON	O	Power control signal. "H" when power is on.
95	LANC IN	I	LANC DATA input.
96	LANC OUT	O	LANC DATA output.
97	N.C.	—	No connect.
98	VCC	—	+5V power.
99	—	—	No connect.
100	—	—	No connect.

● A/D PORT ALLOCATION

- The A/D ports are allocated as shown below.



SW	Pin No.	SW0	SW1	SW2	SW3	SW4	NO INPUT
AD0	82	POWER	EJECT	STOP	PLAY	—	5.0 [V]
AD1	83	DMS SW1	REC	Hi8 AUTO/OFF	EDIT	VOICE BOOST	—
AD2	84	DMS SW2	PAUSE	SYNCHRO EDIT	AUDIO LINE IN	COUNTER RESET	—
AD3	85	DMS SW3	—	—	—	—	—
AD4	86	DMS SW4	—	—	—	—	—
AD5	87	CONTROL L S	—	—	—	—	CONTROL L M

- KEY input signals pass through the A/D ports as shown above.

SECTION 10 MECHANICAL ADJUSTMENTS

For Mechanical Adjustments

For the procedures how to adjust and check the mechanism, as well as how to replace mechanical parts, refer to the separate 8mm Video Mechanical Adjustment Manual III (9-972-732-01).

However, for the procedures how to set the Track Shift mode, refer to the following text.

10-1. TAPE PASS ADJUSTMENT

[TRACK SHIFT]

The 8mm Video Tape Recorder system uses the ATF (Automatic Track Finding) function in which four different pilot signals are used for controlling the tape speed instantaneously to provide high precision tracking. This eliminates the Tracking Adjustment control, thus allowing accurate tracing.

In spite of its advantageous feature, the ATF system may have a difficulty in adjusting the tape pass system. The ATF will automatically corrects tracing even if the head has only a little tracing distortion. This may make it impossible to perform a complete adjustment.

Therefore, when performing a fine adjustment for tracking, the Track Shift mode should be entered before starting this adjustment. This mode will force to operate the ATF to shift the amount of tracking by a given quantity (approximately 1/4), so that tracking can be easily fine adjusted. Furthermore, no track shift jig is needed.

10-1-1. Setting the Track Shift Mode

- 1) Place the adjustment remote control RM-95 (J-6082-053-B) in the HOLD ON position.
- 2) Operate the EDIT +/- button to select adjustment page 0.
- 3) Operate the FF/REW button to select adjustment address 00.
- 4) Operate the PB/STOP button to set to adjustment data 00. (This will go to the Test Mode 3 (Pass Adjustment).)

Note 1 : For details of the Test Mode, refer to "SECTION 8. SERVICE MODE."

Note 2 : If the LP mode is recognized by the system wrongly, operate the Recording Time SP/LP button to enter the SP mode.

Note 3 : After adjustment, operate the PB/STOP button to reset to adjustment data 00. Place the remote control in the HOLD OFF position to return to the normal mode.

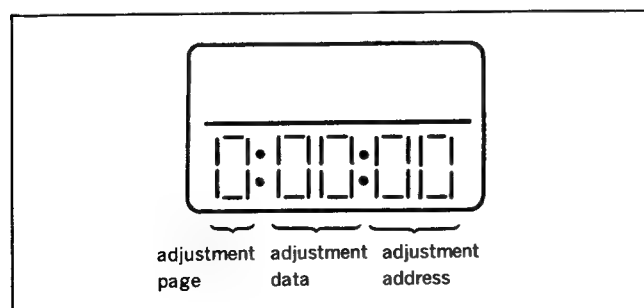


Fig. 10-1.

10-1-2. Preparation before Adjustment

- 1) Clean the surfaces over which tape moves past (of the tape guides, drum, capstan shaft and pinch rollers).
- 2) Oscilloscope Connection and Waveform Output:
1 ch: Drum head's RF signal output, RP-183 board CN001 pin ③ (PB Y)
External trigger input: RP-183 board CN001 pin ② (RF SWP)
GND: RP-183 board CN001 pin ① (GND)
- 3) Play back alignment tape for tracking (WR5-1CP).
- 4) Check that RF waveform observed on the oscilloscope is flat on both entrance and exit sides.
If not flat, perform necessary adjustment according to the separate 8 mm Video Mechanical Adjustment III.

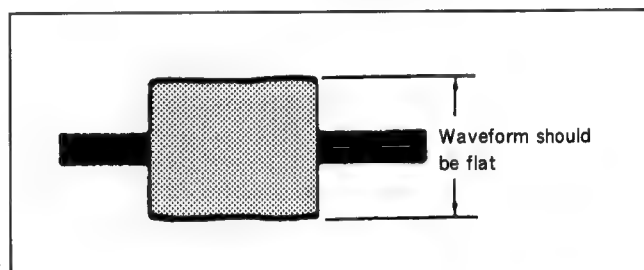


Fig. 10-2.

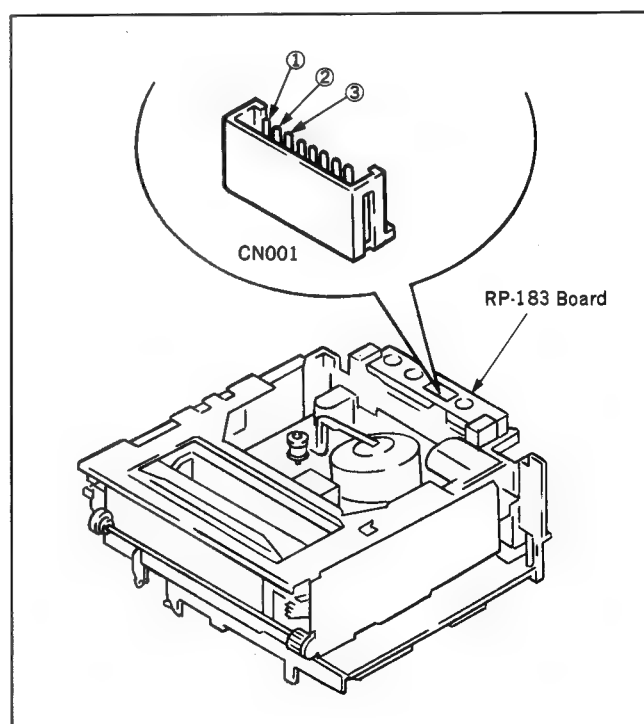


Fig. 10-3.

SECTION 11 ELECTRICAL ADJUSTMENTS

See the adjusting part location diagram from on page 160 for the adjustment.

For details of the SENSER LANC , refer to "SECTION 8. SERVICE MODE".

11-1. PREPARATION BEFORE ADJUSTMENT

11-1-1. Equipment Required

The measuring instruments used for this alignment include :

- 1) Monitor TV
- 2) Oscilloscope, dual-trace, bandwidth of 30MHz or more, with delay mode (A probe 10:1 should be used unless otherwise specified.)
- 3) Frequency counter
- 4) Pattern generator (with Video Output terminal; refer to Section 11-1-2. Equipment Connection.)
- 5) Digital voltmeter
- 6) Audio generator
- 7) Audio level meter
- 8) Audio distortion meter
- 9) Audio attenuator
- 10) Vector scope
- 11) Alignment tapes
 - For tracking adjustment
(WR5-1CP) Part No. : 8-967-995-07
 - For video frequency characteristic adjustment
(WR5-7CE) Part No. : 8-967-995-18
 - For L mode operation check
 - For SP (WR5-5CSP) Part No. : 8-967-995-46
 - (WR5-4CSP) Part No. : 8-967-995-47
 - For LP (WR5-4CL) Part No. : 8-967-995-56
 - For E mode operation check (ME tape)
 - For SP (WR5-8CSE) Part No. : 8-967-995-48
 - For LP (WR5-8CLE) Part No. : 8-967-995-57
 - For Checking of AFM stereo operation
(WR5-9CS) Part No. : 8-967-995-28
- 12) Adjustment remote control (J-6082-053-B)

11-1-2. Equipment Connection

According to the specification of the input terminal (S VIDEO or VIDEO), connect required measuring instruments as shown in Fig. 10-1. and perform adjustment. The input terminal is specified in the parentheses () in the signal column. Unless otherwise specified, either terminal may be used. Note that the S VIDEO input terminal takes precedence. When performing adjustment with the VIDEO input terminal, pull out the connector from the S VIDEO input terminal.

Note 1 : When S VIDEO input is specified for a specific adjustment, if the adjustment is performed with VIDEO input, the product specifications for this unit may not be satisfied. The specified input must be always used.

Note 2 : If an adjustment is performed by using a VTR with S Video output terminal as a signal source, the performance of this unit will be affected by that VTR. A pattern generator with Y/C separation output terminal should be used wherever possible.

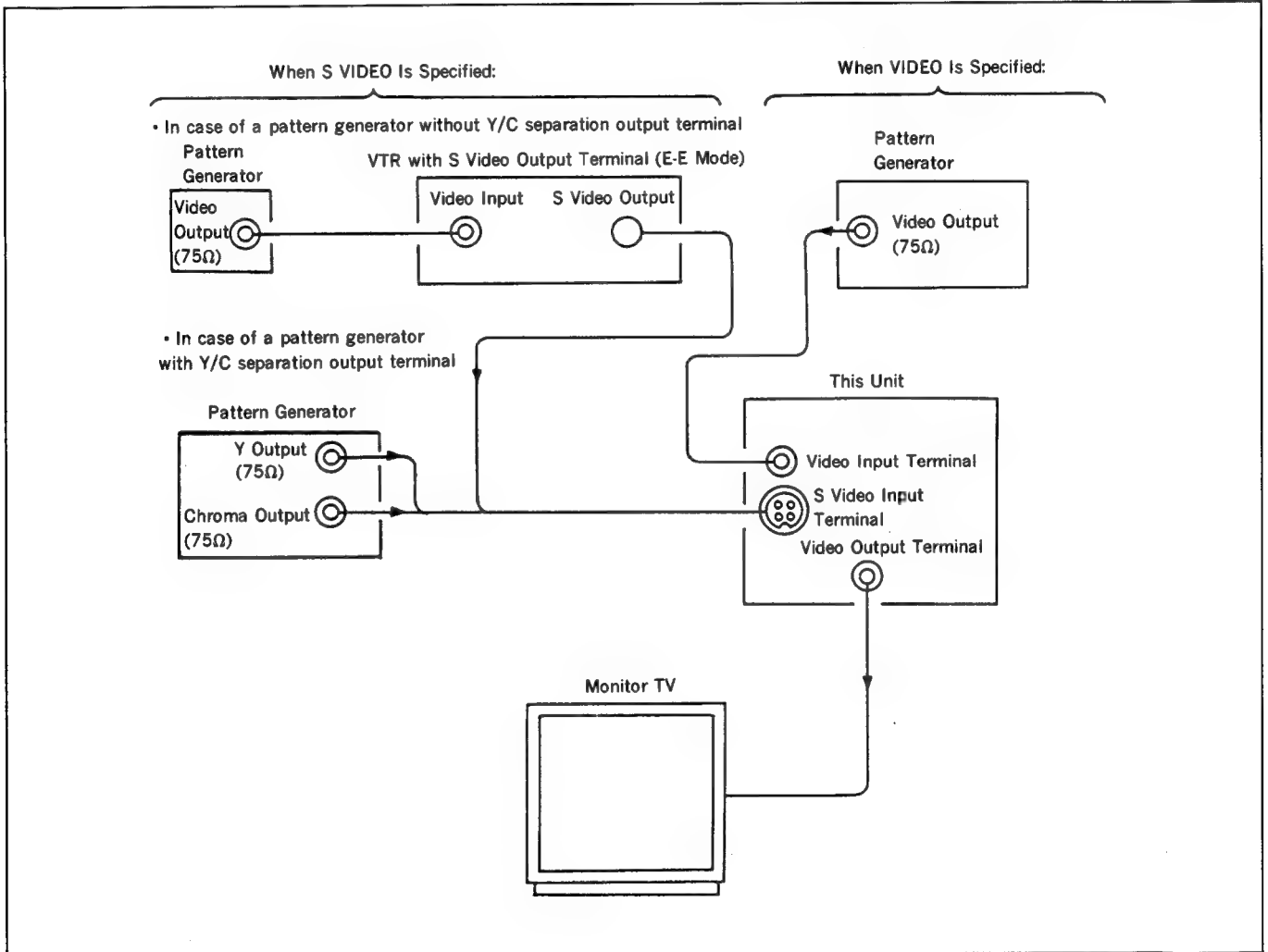


Fig. 11-1.

11-1-3. Input Signal Check

Video signal produced by a pattern generator is used as an adjustment signal to perform electrical alignment for this unit. This video signal must satisfy the specification.

1) S VIDEO Input

Connect an oscilloscope to the Y Signal terminal of the S Video Input terminal. Check that the synchronizing signal of the Y signal is approximately at 0.3Vp-p and that its video portion has an amplitude of approximately 0.7Vp-p. (When a VTR with S video output terminal is used, in addition to these checks, make sure that there are no residual chroma and burst signals.) Then, connect the scope to the Chroma signal terminal of the S Video Input terminal and check that the chroma signal has a burst signal amplitude of 0.3Vp-p and the burst signal waveform is flat. And check that the amplitude ratio of burst signal to chroma signal is 0.30 : 0.66. The Y and chroma signals used for electrical alignment are shown in Fig. 11-2.

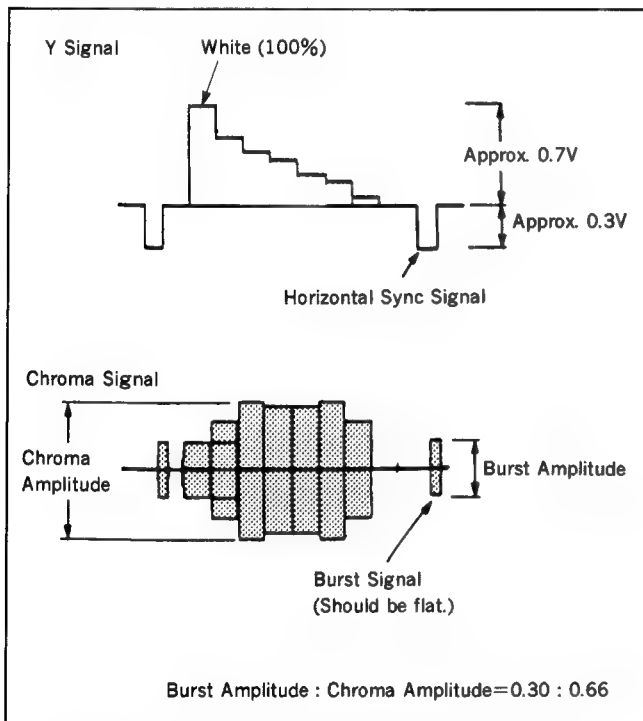


Fig. 11-2. Color Bar Signals of Pattern Generator

2) VIDEO Input

Connect an oscilloscope to the Video Input terminal. Check that the synchronizing signal of the Y signal has an amplitude of approximately 0.7V and that the burst signal has an amplitude of approximately 0.3V and its waveform is flat. And check that the level ratio of burst signal to "red" signal is 0.30 : 0.66.

The video signal (color bar) used for electrical aligning this unit is shown in Fig. 11-3.

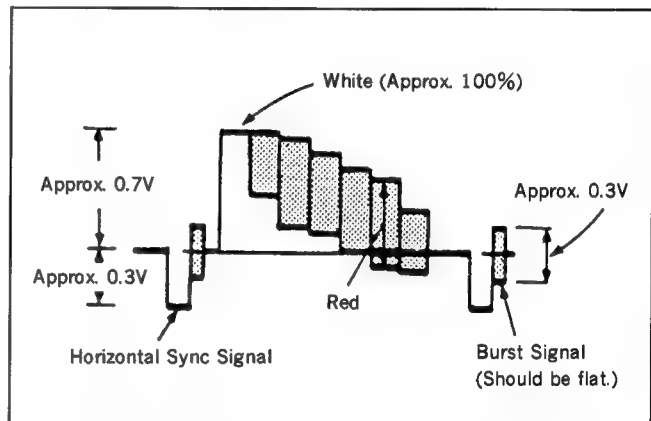


Fig. 11-3. Color Bar Signals of Pattern Generator

11-1-4. Alignment Tapes

The following alignment tapes are available.

The tape specified in the signal column for the adjustment to be performed should be used.

Note that if no tape code is specified for the adjustments in which alignment tapes for operation check are used, any tape for operation check may be used.

Alignment Tape	Record Mode	Tape Type	Tape Speed	Contents of Record		Applications
				Video Area	PCM Area	
Tracking WR5-1CP	L	MP	SP	CH2 : 1MHz tape pass adjustment signal Switching position adjustment marker (CH1 : 9MHz)		Tape pass adjustment, Switching position adjustment
Video frequency characteristic WR5-7CE	E	ME	SP	RF sweep 0~15MHz Marker 2, 4.5, 7, 8.5, 10MHz		Frequency characteristic adjustment
Operation check WR5-4CSP or WR5-5CSP	L	MP	SP	● Video signal Color bar 4 min. Monoscope 4 min. ● Audio signal (AFM) 400Hz, 60% modulated	● Audio signal (PCM) Monoscope portion 20Hz 20sec. } This cycle 400Hz 20sec. } is repeated 14kHz 20sec. } 4 times Color bar portion 1kHz, 4min.	Operation check
WR5-8CSE	E	ME	SP		400Hz, 8 min.	
WR5-4CL	L	MP	LP	● Video signal Color bar 4 min. Monoscope 4 min. ● Audio signal (AFM) 400Hz, 60% modulated		
WR5-3CL	L	MP	LP		● Audio signal (PCM) 400Hz, 8 min.	
WR5-8CLE	E	ME	LP			
AFM stereo operation check WR5-9CS	L	MP	SP	● Video signal Color bar 4 min. Monoscope 4 min. ● Audio signal (AFM) Stereo portion (color bar) Lch : 400Hz Rch : 1kHz (L+R : 1.5MHz±60kHz DEV) (L-R : 1.7MHz±30kHz DEV) Bilingual portion (monoscope) MAIN : 400Hz (1.5MHz±60kHz DEV) SUB : 1kHz (1.7MHz±30kHz DEV)	● Audio signal (PCM) 400Hz, 8 min.	AFM stereo operation check

Note : Recording Mode

L Conventional mode

E Hi 8 (High Band) mode

Tape Type

MP Metal powder tape

ME Metal evaporated tape

The color bar signal recorded on these alignment tapes are shown in Fig. 11-4.

Note : This waveform is measured at the VIDEO OUT terminal (terminated at 75Ω).

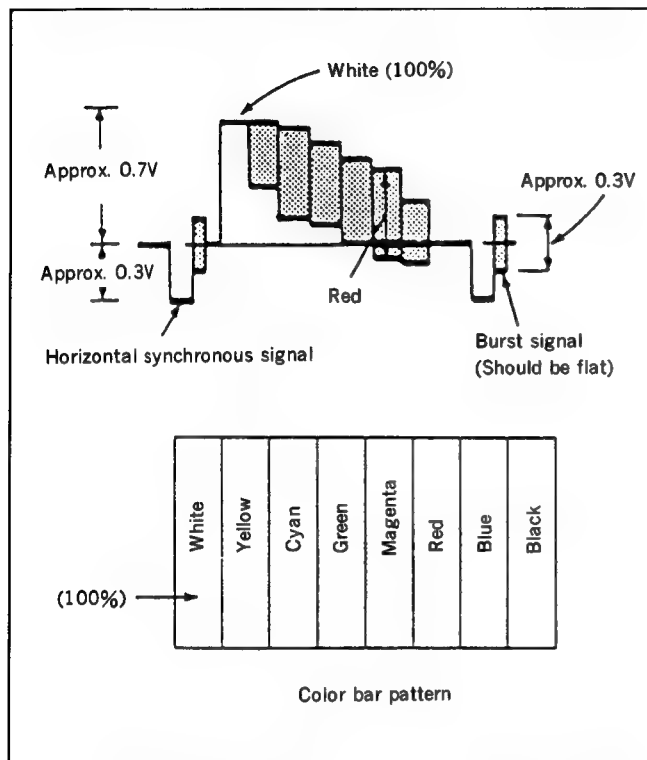


Fig. 11-4. Color Bar Signal of Alignment Tape

11-1-5. Input/Output Levels and Impedance

Video input	LINE IN VIDEO (phono jack) (1) Input signal : 1Vp-p, 75ohms, unbalanced, sync negative
Video output	LINE OUT 1/2 VIDEO (phono jack) (1) Output signal : 1Vp-p, 75ohms, unbalanced, sync negative EURO-AV (21-pin) (1) Output signal : pin 19 1Vp-p, 75ohms unbalanced, sync negative
S VIDEO input	LINE IN S VIDEO (4-pin, mini-DIN) (1) Luminance signal : 1Vp-p, 75ohms, unbalanced, sync negative Chrominance signal : 0.3Vp-p, 75ohm, unbalanced
S VIDEO output	LINE OUT1 S VIDEO (4-pin, miniDIN) (1) Luminance signal : 1Vp-p, 75ohms, unbalanced, sync negative Chrominance signal : 0.3Vp-p, 75ohms, unbalanced EURO-AV (S) 21-pin (pins 15 and 19)
Audio input	LINE IN AUDIO (phono jack) (2) Input level : -7.5dBs
Audio output	LINE OUT1 AUDIO (phono jack) (2) LINE OUT2 AUDIO (phono jack) (1) Standard impedance : -7.5dBs at load impedance 47kilohms Output impedance : less than 10kilohms EURO-AV (21-pin) (1) Standard impedance : -6dBs at load impedance 1kilohm Output impedance : less than 10kilohms
CONTROL S IN	Mini jack
CONTROL L	Stereo mini-mini jack

11-2. POWER SUPPLY CHECK

11-2-1. Output Voltage Check (POWER SUPPLY BOARD)

Mode	E-E
Measurement instrument	Digital voltmeter
UN 12V check	
Measurement point	CN201 pin ⑥
Specified value	$12.0 \pm 0.1\text{Vdc}$
UN 10.5V check	
Measurement point	CN201 pin ⑧
Specified value	$10.5 \pm 0.1\text{Vdc}$
UN 5.7V check	
Measurement point	CN201 pin ⑤
Specified value	$6.0 \pm 0.1\text{Vdc}$
SW 5V check	
Measurement point	CN201 pin ④
Specified value	$5.0 \pm 0.05\text{Vdc}$
UN -5V check	
Measurement point	CN201 pin ①
Specified value	$-5.0 \pm 0.1\text{Vdc}$

[Check Method]

- 1) Each of these supply voltages must meet its specified value.

11-3. SYSTEM CONTROL SYSTEM CHECK

11-3-1. Timer Clock Check (LC-46 Board)

Mode	E-E
Signal	Arbitrary
Measurement point	IC101 pin ④ (X1)
Measuring instrument	Frequency counter
Specified value	$10000 \pm 100\text{kHz}$

Note : A frequency counter should be connected through a buffer amplifier (oscilloscope, etc.) having a high impedance and a low capacitance.

[Check Method]

- 1) Check to $10000 \pm 100\text{kHz}$.

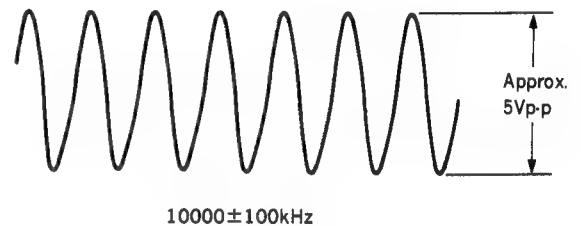


Fig. 11-5.

11-4. SERVO SYSTEM ADJUSTMENTS

[Adjustment sequence]

1. PWM Frequency Adjustment
2. Switching Position Adjustment

11-4-1. PWM Frequency Adjustment (SS-155 Board)

Mode	Record
Signal	Arbitrary
Measurement point	IC005 pin ⑦
Measuring instrument	Frequency counter
Adjustment element	RV102
Specified value	$475 \pm 25\text{kHz}$

[Adjustment Method]

- 1) Set Recording Time to SP mode.
- 2) Use RV102 to adjust to $475 \pm 25\text{kHz}$.
- 3) Set Recording Time to LP mode.
- 4) Check for at $475 \pm 25\text{kHz}$.
- 5) If the specification is not met, repeat Steps 1) to 4).

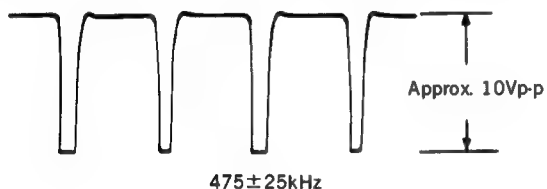


Fig. 11-6.

11-4-2. Switching Position Adjustment (LC-46 Board)

[Adjustment object]

Sets the switching timing of the video head. If deviated, this causes switching noise or jitter on the played back screen.

Mode	Playback
Signal	Alignment tape : For operation check (WR5-1CP)
Measurement point	CH-1 : RP-183 board CN001 pin ② (RF SWP) CH-2 : RP-183 board CN001 pin ③ (PB Y)
Measuring instrument	Oscilloscope
Adjustment page	0
Adjustment address	03 (Switching Position Data (LOW)) 04 (Switching Position Data (HIGH))
Adjustment element	RV101 RV102
Specified value	$t = 0 \pm 10\mu\text{sec}$

[Adjustment Method]

- 1) Place the adjustment remote control RM-95 (J-6082-053-B) in the HOLD ON position.
- 2) Use EDIT +/− button to select adjustment page 7.
- 3) Use FF/REW button to select adjustment address 00.
- 4) Use PB/STOP button to set to adjustment data 05.
- 5) Press PAUSE button on the remote control to store the adjustment data.
- 6) Use EDIT +/− button to select adjustment page 0.
- 7) Use FF/REW button to select adjustment address 04.
- 8) Use RV101 to adjust to $t = 0 \pm 255\mu\text{sec}$.
- 9) Use FF/REW button to select adjustment address 03.
- 10) Use RV102 to adjust to $t = 0 \pm 10\mu\text{sec}$.
- 11) Use EDIT +/− button to select adjustment page 7.
- 12) Use FF/REW button to select adjustment address 00.
- 13) Use PB/STOP button to set to adjustment data 00.
- 14) Press PAUSE button on the remote control to store the adjustment data.

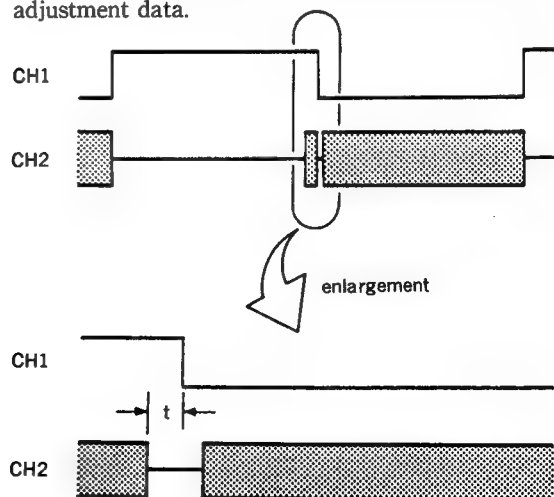


Fig. 11-7.

11-5. VIDEO SYSTEM ADJUSTMENTS

Color video signal supplied from a pattern generator is used as a video input signal for Video System Alignment in the Recording mode. This signal should be checked to ensure that it meets the specifications provided in Fig. 11-2 and "INPUT SIGNAL CHECK".

The adjustments in Video System Alignment should be performed in the following sequence.

[Adjustment sequence]

1. Playback Frequency Characteristic Adjustment
2. EE Level Adjustment
3. IR Adjustment
4. Y/Chroma Separation Adjustment
5. Emphasis Y Level Adjustment
6. AC Clip Check
7. L Mode Y FM Carrier Frequency, Y FM Deviation Adjustment
8. E Mode Y FM Carrier Frequency, Y FM Deviation Adjustment
9. Chroma Emphasis Adjustment
10. Chroma Level Adjustment
11. Video Input Y/Chroma Separation Adjustment
12. E mode Playback Level Adjustment
13. L mode Playback Level Adjustment
14. Recording Y Level Adjustment
15. Recording Chroma Level Adjustment
16. Y/Chroma Mix Level Adjustment
17. Playback CCD Input Level Adjustment
18. Quasi, DL Burst Adjustment

11-5-1. Playback Frequency Characteristic Adjustment (RP-183 Board)

[Adjustment Object]

Sets the RF output of head to optimum frequency. If deviated, this causes roughness or black & white dot noise.

(1) 1ch, 2ch

Note: The designation [] stands for adjustment on CH-2.

Mode	Playback
Signal	Alignment tape: for frequency characteristic adjustment (WR5-7CE)
Measurement point	CN001 pin ③ (PB Y) External trigger: CN001 pin ② (RF SWP) Trigger slope: -[+]
Measuring instrument	Oscilloscope
Adjustment element	RV001 [RV002]
Specified value	4.5MHz level : 8.5MHz level = 3 : 2.2 ± 0.2

[Adjustment Method]

- 1) Use RV001 [RV002] to adjust so that the ratio of 4.5MHz level to 8.5MHz of PB RF output waveform is 3 : 2.2 ± 0.2.

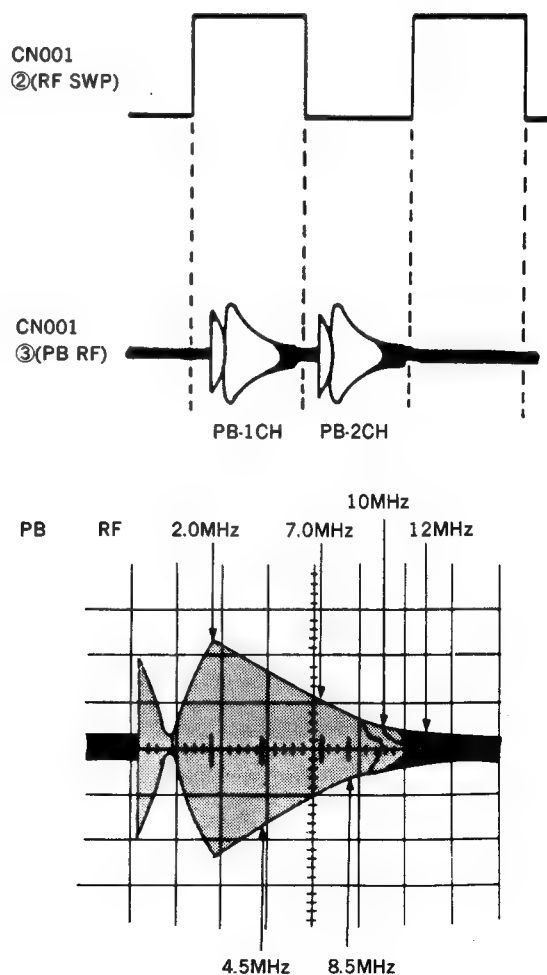


Fig. 11-8.

(2) 1'ch

Mode	Playback
Signal	Alignment tape: for frequency characteristic adjustment (WR5-7CE)
Measurement point	CN001 pin ⑧ (1'CH RF) External trigger : CN001 pin ② (RF SWP)
Measuring instrument	Oscilloscope
Adjustment page	D
Adjustment address	02 (Test Mode (COSMO))
Adjustment element	RV003
Specified value	4.5MHz level : 8.5MHz level=3 : 2.6±0.2

[Adjustment Method]

- 1) Place the adjustment remote control in the HOLD ON position.
- 2) Use EDIT+/- button to select adjustment page 0.
- 3) Use FF/REW button to select adjustment address 02.
- 4) Use PB/STOP button to select adjustment data 02.
- 5) Press PAUSE button on the remote control to store the adjustment data.
- 6) Use RV003 to adjust so that the ratio of 4.5MHz level to 8.5MHz of PB RF output waveform is 3 : 2.6±0.2.
- 7) Use EDIT+/- button to select adjustment page 0.
- 8) Use FF/REW button to select adjustment address 02.
- 9) Use PB/STOP button to select adjustment address 00.
- 10) Press PAUSE button on the remote control to store the adjustment data.
- 11) Place the adjustment remote control in the HOLD OFF position.

11-5-2. EE Level Adjustment (VI-129 Board)

[Adjustment Object]

Sets the video output level during stop. If deviated, this causes too bright or too dark image, or it disallows correct reproduction of color signal.

Mode	Record
Signal	Color bar (S VIDEO)
Measurement point	CN511 pin ⑳ (LINE OUT V)
Measuring instrument	Oscilloscope
Adjustment element	RV621
Specified value	$1.00 \pm 0.05V_{p-p}$

[Adjustment Method]

- 1) Use RV621 to adjust to $1.00 \pm 0.05V_{p-p}$.

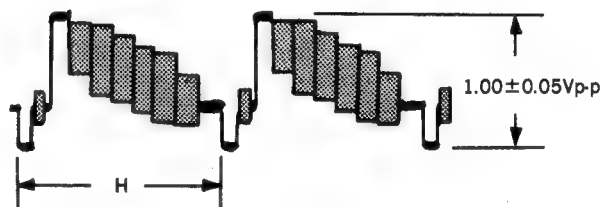


Fig. 11-9.

11-5-3. IR Adjustment (VI-129 Board)

[Adjustment Object]

Sets the characteristic of filter and DEMOD circuit. If deviated, this disallows correct reproduction of EE and played back picture color signal.

Mode	Record
Signal	Color bar (VIDEO)
Measurement point	IC601 pin ⑦ (Y COMB OUT)
Measuring instrument	Oscilloscope
Adjustment element	RV618
Specified value	Red residual chroma component should be minimized (to 50mVp-p or less).

[Connection]

- 1) Connect between pin ⑤ (SWP) and pin ⑭ (V REF) of IC601.

[Adjustment Method]

- 1) Use RV618 to adjust so that the red residual chroma component is minimized (to a level of 50mVp-p or less).

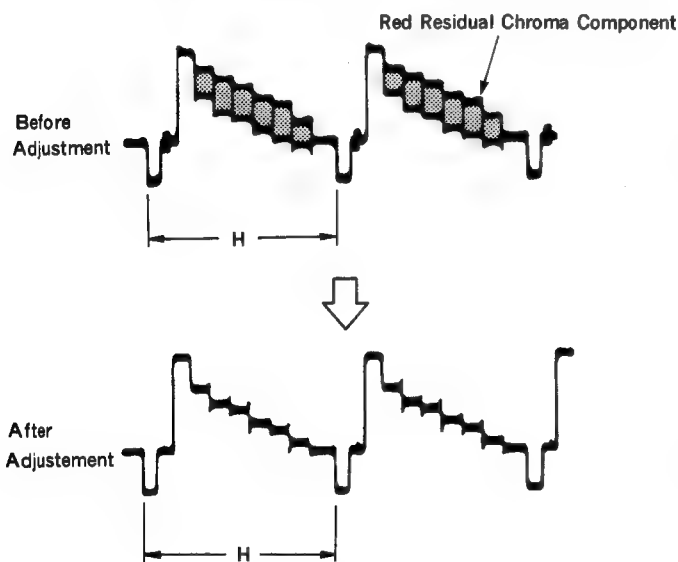


Fig. 11-10.

11-5-4. Y/Chroma Separation Adjustment (VI-129 Board)

[Adjustment Object]

If deviated, this causes marked occurrence of beats in played back picture.

Mode	E-E
Signal	Color bar (VIDEO)
Measurement point	IC601 pin ⑩ (C+CD)
Measuring instrument	Oscilloscope
Adjustment element	RV617 (PHASE) RV620 (GAIN)
Specified value	Red residual chroma component should be minimized (to 20mVp-p or less).

[Adjustment Method]

- 1) Adjust RV620 and RV617 alternately to minimize the red residual chroma component (to a level of 20mVp-p or less).

Note : The adjustment should be performed in the sequence of RV620 to RV617 to RV620 to RV617 two or more times for each trimming.

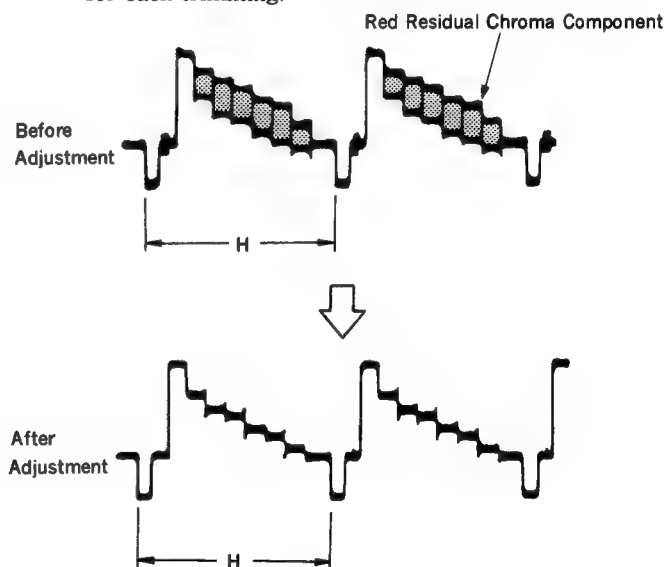


Fig. 11-11.

11-5-5. Emphasis Y Level Adjustment (VI-129 Board)

[Adjustment Object]

Sets the Y level of emphasis circuit. If deviated, this causes too bright or too dark image during play back after recording.

Mode	Record
Signal	Color bar (S VIDEO)
Measurement point	IC601 pin ③ (EMPH Y)
Measuring instrument	Oscilloscope
Adjustment element	RV613
Specified value	$0.50 \pm 0.02 \text{Vp-p}$

[Adjustment Method]

- 1) Use RV613 and adjust to $0.50 \pm 0.02 \text{Vp-p}$.

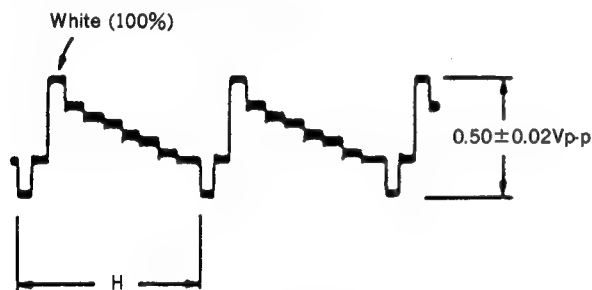


Fig. 11-12.

11-5-6. AC Clip Check (VI-129 Board)

Mode	Record
Signal	Color bar (S VIDEO)
Measurement point	IC601 pin ⑤ (DEV)
Measuring instrument	Oscilloscope
Specified value	White Clip : $\frac{B}{A} \times 100 = 245 \pm 10\%$ Dark Clip : $\frac{C}{A} \times 100 = 95 \pm 10\%$

Note : To measure with the oscilloscope, effect the band limit of 20MHz.

[Check Method]

- 1) Insert MP type cassette tape. (MP, L mode)
- 2) Check that the output waveform at IC601 pin ⑤ is $\frac{B}{A} \times 100 = 245 \pm 10\%$. Also check that the output waveform at IC601 pin ⑤ is $\frac{C}{A} \times 100 = 95 \pm 10\%$.

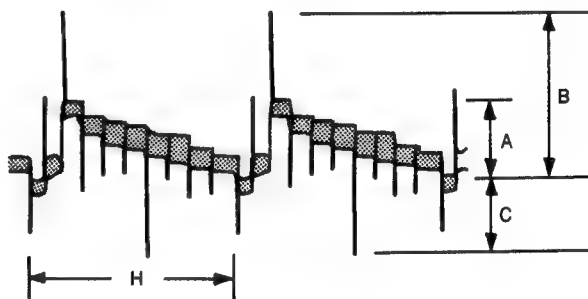


Fig. 11-13.

11-5-7. L Mode Y FM Carrier Frequency, Y FM Deviation Adjustment

Note 1: After this adjustment, be sure to perform "11-5-8. E Mode Y FM Carrier Frequency, Y FM Deviation Adjustment".

Note 2: The S Video Line output terminal should be terminated at 75Ω .

(1) L Mode Y FM Carrier Frequency Adjustment (VI-129 Board)

[Adjustment Object]

Sets the FM carrier frequency of REC Y for L-mode. If deviated, this caused blurred played back picture or deteriorated resolution.

Mode	E-E
Signal	No signal
Measurement point	CN502 pin ⑦ (REC Y RF)
Measuring instrument	Frequency counter Oscilloscope
Adjustment element	RV625
Specified value	$4.37 \pm 0.05\text{MHz}$

Note: A frequency counter should be connected through a buffer amplifier (oscilloscope, etc.) having a high impedance and a low capacitance.

[Adjustment Method]

- 1) Insert MP type cassette tape.
- 2) Use RV625 to adjust to $4.37 \pm 0.05\text{MHz}$.



Fig. 11-14.

(2) L Mode Y FM Deviation Adjustment (VI-129 Board)

[Adjustment Object]

Sets the FM deviation of REC Y for L-mode. If deviated, this causes too bright/dark image, or marked occurrence of black stretch over modulation noise.

Mode	Record and playback
Signal	Color bar (S VIDEO)
Measurement point	Line Video out terminal
Measuring instrument	Oscilloscope
Adjustment element	RV623
Specified value	Playback level should be at $1.00 \pm 0.05\text{Vp-p}$.

[Adjustment Method]

- 1) Insert MP type cassette tape.
- 2) Record color bar signal.
- 3) Play back the recorded signal.
- 4) Check the playback output level.
Specification: $1.00 \pm 0.05\text{Vp-p}$
- 5) If the specification is not met, rotate RV623 as directed below and then repeat Steps 1) to 4).

	Direction of Rotating RV623
Over specified value	Counterclockwise (⤿)
Below specified value	Clockwise (⤻)

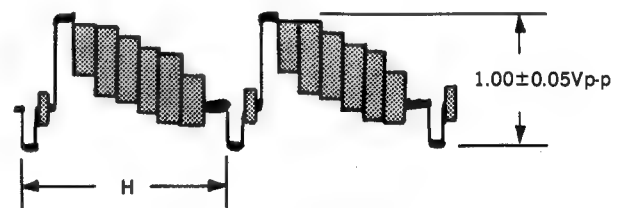


Fig. 11-15.

11-5-8. E Mode Y FM Carrier Frequency, Y FM Deviation Adjustment

Note 1: When performing this adjustment, it is a prerequisite that "11-5-7. L Mode FM Carrier Frequency, Y FM Deviation Adjustment" has been completed.

Note 2: The S Video Line output terminal should be terminated at 75Ω .

(1) E Mode Y FM Carrier Frequency Adjustment (VI-129 Board)

[Adjustment Object]

Sets the FM carrier frequency of REC Y for E-mode. If deviated, this caused blurred played picture or deteriorated resolution.

Mode	E-E
Signal	No signal
Measurement point	CN502 pin ⑦ (REC Y RF)
Measuring instrument	Frequency counter Oscilloscope
Adjustment element	RV622
Specified value	$5.96 \pm 0.05\text{MHz}$

Note: A frequency counter should be connected through a buffer amplifier (oscilloscope, etc.) having a high impedance and a low capacitance.

[Adjustment Method]

- 1) Insert ME type cassette tape.
- 2) Use RV622 to adjust to $5.96 \pm 0.05\text{MHz}$.



Fig. 11-16.

(2) E Mode Y FM Deviation Adjustment (VI-129 Board)

[Adjustment Object]

Sets the FM deviation of REC Y for E-mode. If deviated, this causes too bright/dark image, or marked occurrence of black stretch over modulation noise.

Mode	Record and playback
Signal	Color bar (S VIDEO)
Measurement point	Line Video out terminal
Measuring instrument	Oscilloscope
Adjustment element	RV624
Specified value	Playback level should be at $1.00 \pm 0.05\text{Vp-p}$.

[Adjustment Method]

- 1) Insert ME type cassette tape.
- 2) Record color bar signal.
- 3) Play back the recorded signal.
- 4) Check the playback output level.
Specification: $1.00 \pm 0.05\text{Vp-p}$
- 5) If the specification is not met, rotate RV624 as directed below and then repeat Steps 1) to 4).

	Direction of Rotating RV624
Over specified value	Counterclockwise (↺)
Below specified value	Clockwise (↻)

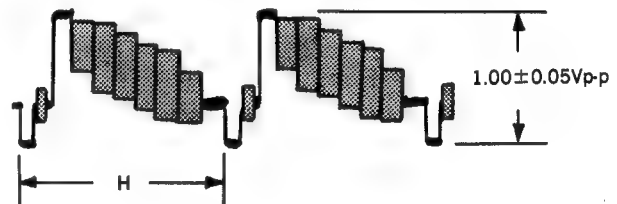


Fig. 11-17.

11-5-9. Chroma Emphasis Adjustment (VI-129 Board)

[Adjustment Object]

Sets the emphasis frequency. If deviated, this causes unnatural color.

Mode	Record
Signal	Color bar (S VIDEO)
Measurement point	IC802 pin ② (B.EMPH 0)
Measuring instrument	Oscilloscope
Adjustment element	FL802
Specified value	Red residual chroma component should be minimized. (to 350mVp-p or less)

Note : Connect with 3.3k Ω (1-249-423-11) resistor between IC802 pin ② and GND.

[Adjustment Method]

- 1) Adjust FL802 to allow the latter half of the red component in the chroma signal to have a minimum amplitude.

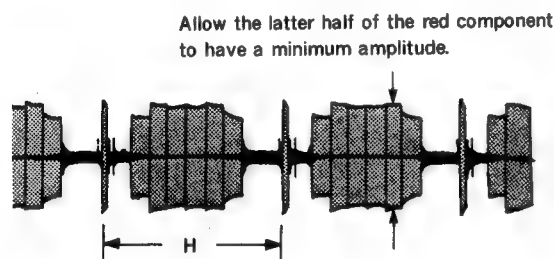


Fig. 11-18.

11-5-10. Chroma Level Adjustment (VI-129 Board)

[Adjustment Object]

Sets the color density. If deviated, this causes too deep or too light color.

Mode	E-E
Signal	Color bar (S VIDEO)
Measurement point	CN511 pin ⑩ (LINE OUT C)
Measuring instrument	Oscilloscope
Adjustment element	RV821
Specified value	300 \pm 15mVp-p

[Adjustment Method]

- 1) Use RV821 to adjust to 300 \pm 15mVp-p.

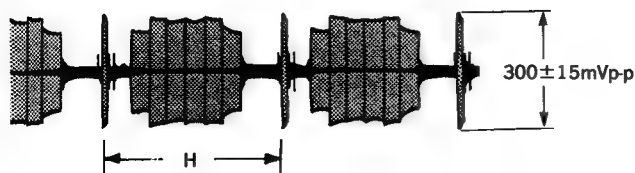


Fig. 11-19.

11-5-11. Video Input Y/C Separation Adjustment

(1) Y Level Adjustment (VI-129 Board)

[Adjustment Object]

Sets the level of Video luminance signal as pin input. If deviated, this causes excessive darkness of brightness.

Mode	E-E
Signal	Color bar (VIDEO)
Measurement point	CN511 pin ⑩ (LINE OUT Y)
Measuring instrument	Oscilloscope
Adjustment element	RV615
Specified value	1.00 \pm 0.05Vp-p

[Adjustment Method]

- 1) Use RV615 to adjust to 1.00 \pm 0.05Vp-p.

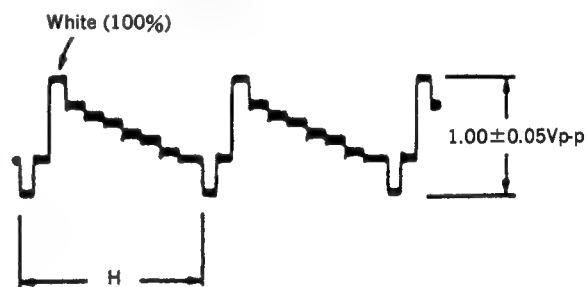


Fig. 11-20.

(2) Chroma Level Check (VI-129 Board)

Mode	E-E
Signal	Color bar (VIDEO)
Measurement point	CN511 pin ⑩ (LINE OUT C)
Measuring instrument	Oscilloscope
Specified value	$300 \pm 30 \text{ mVp-p}$

[Check Method]

- 1) Check to $300 \pm 30 \text{ mVp-p}$.

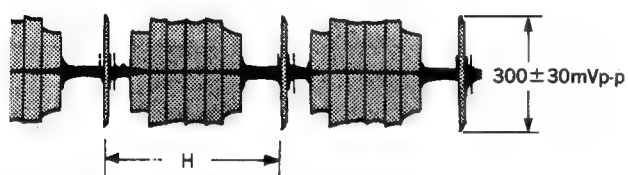


Fig. 11-21.

11-5-12. E Mode Playback Level Adjustment (VI-129 Board)

[Adjustment Object]

Sets the luminance level for Hi8 playback. If deviated, this causes too bright or too dark Hi8 picture.

Mode	Playback
Signal	Alignment tape : For operation check, color bar portion (WR5-8CSE)
Measurement point	CN511 pin ⑩ (LINE OUT Y)
Measuring instrument	Oscilloscope
Adjustment element	RV614
Specified value	$1.00 \pm 0.05 \text{ Vp-p}$

[Adjustment Method]

- 1) Insert ME tape.
- 2) Use RV614 to adjust to $1.00 \pm 0.05 \text{ Vp-p}$.

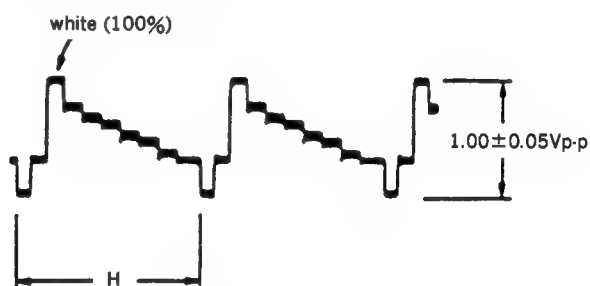


Fig. 11-22.

11-5-13. L Mode Playback Level Adjustment (VI-129 Board)

[Adjustment Object]

Sets the luminance level for normal playback. If deviated, this causes too bright or too dark normal picture.

Mode	Playback
Signal	Alignment tape: For operation check, color bar portion (WR5-5CSP)
Measurement point	CN511 pin ⑩ (LINE OUT Y)
Measuring instrument	Oscilloscope
Adjustment element	RV612
Specified value	$1.00 \pm 0.05 \text{Vp-p}$

[Adjustment Method]

- 1) Insert MP tape.
- 2) Use RV612 to adjust to $1.00 \pm 0.05 \text{Vp-p}$.

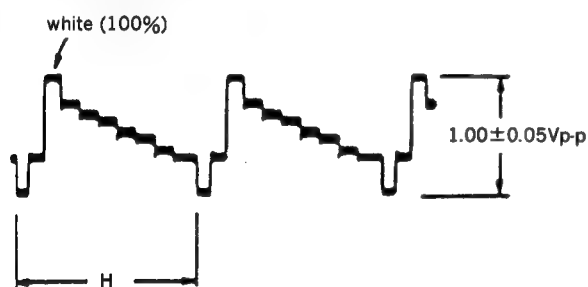


Fig. 11-23.

11-5-14. Recording Y RF Level Adjustment (VI-129 Board)

[Adjustment Object]

Sets the recording level of luminance signal. If deviated, this causes black stretch over modulation noise or color shade.

Mode	Record
Signal	No signal
Measurement point	CN502 pin ⑦ (REC Y RF)
Measuring instrument	Oscilloscope (20MHz bandwidth)
Adjustment element	RV601
Specified value	$680 \pm 10 \text{mVp-p}$

Note : Set an oscilloscope to 20MHz bandwidth.

[Adjustment Method]

- 1) Insert ME tape.
- 2) Record.
- 3) Use RV601 to adjust to $680 \pm 10 \text{mVp-p}$.



Fig. 11-24.

11-5-15. Recording Chroma Level Adjustment (VI-129 Board)

[Adjustment Object]

Sets the recording level of color signal. If deviated, this causes too deep or too light color.

Mode	E-E
Signal	Color bar
Measurement point	① IC801 pin ⑤ ② IC801 pin ① ③ IC801 pin ③
Measuring instrument	Oscilloscope
Adjustment element	① RV802 ② RV803 ③ RV804
Specified value	① $200 \pm 10 \text{mVp-p}$ ② $350 \pm 10 \text{mVp-p}$ ③ $350 \pm 10 \text{mVp-p}$

[Adjustment Method]

- 1) Remove AU-156 board (since AFM signal hinders adjustment).
- 2) Enter E-E mode.
- 3) Connect 2-ch input of oscilloscope to VIDEO OUT (for trigger).
- 4) Insert MP tape.
- 5) Connect 1-ch input of oscilloscope to pin 5 of IC801.
- 6) Adjust RV802 so that YELLOW is at $200 \pm 10 \text{mVp-p}$.
- 7) Change to ME tape.
- 8) Connect 1-ch input of oscilloscope to pin 1 of IC801.
- 9) Adjust RV803 so that YELLOW is at $350 \pm 10 \text{mVp-p}$.
- 10) Connect 1-ch input of oscilloscope to pin 3 of IC801.
- 11) Adjust RV804 so that YELLOW is at $350 \pm 10 \text{mVp-p}$.

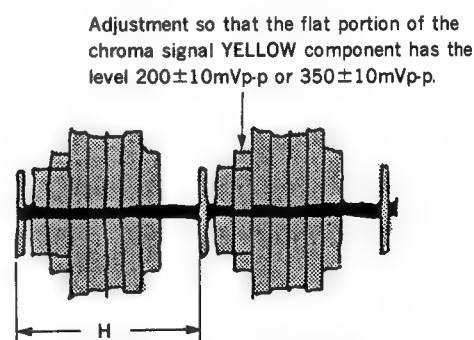


Fig. 11-25.

11-5-16. Y/Chroma Mix Level Adjustment

(1) Y Level Adjustment (VI-129 BOARD)

[Adjustment Object]

Determines the luminance level of VIDEO signal as pin input. If deviated, this causes excessive brightness or darkness.

Mode	E-E
Signal	Color bar (S VIDEO)
Measurement point	CN511 pin ② (LINE OUT V)
Measuring instrument	Oscilloscope
Adjustment element	RV102
Specified value	$1.00 \pm 0.02 \text{Vp-p}$

[Adjustment Method]

- 1) Use RV102 to adjust to $1.00 \pm 0.02 \text{Vp-p}$.

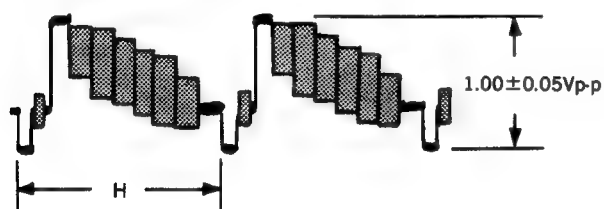


Fig. 11-26.

(2) Chroma Level Adjustment (VI-129 BOARD)

[Adjustment Object]

Sets the color signal level of VIDEO signal as pin input. If deviated, this causes too deep or too light color.

Mode	E-E
Signal	Color bar (S VIDEO)
Measurement point	CN511 pin ② (LINE OUT V)
Measuring instrument	Oscilloscope
Adjustment element	RV101
Specified value	$300 \pm 15 \text{mVp-p}$

[Adjustment Method]

- 1) Adjust RV101 so that the burst level is at $300 \pm 15 \text{mVp-p}$.

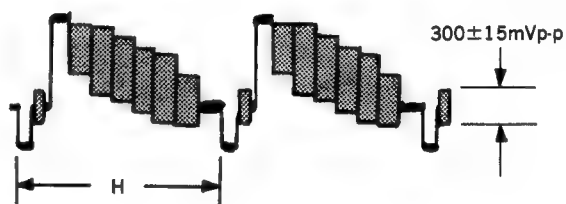


Fig. 11-27.

11-5-17. Playback CCD Input Level Adjustment (VI-129 Board)

[Adjustment Object]

Sets the de-emphasis input level. If deviated, this causes excessive brightness or darkness.

Mode	Playback+Pause (SP mode)
Signal	Alignment tape : For operation check, (WR5-8CSE) Color bar portion
Measurement point	IC601 pin ⑮ (DL IN2)
Measuring instrument	Oscilloscope
Adjustment element	RV611
Specified value	The level difference between playback and pause modes must be $0 \pm 0.05V_{p-p}$.

[Adjustment Method]

- 1) Confirm that the video signal level is at $0.50 \pm 0.05V_{p-p}$ in playback mode.
- 2) Enter the playback pause mode.
- 3) Adjust RV611 so that the video signal level is equal to during playback.

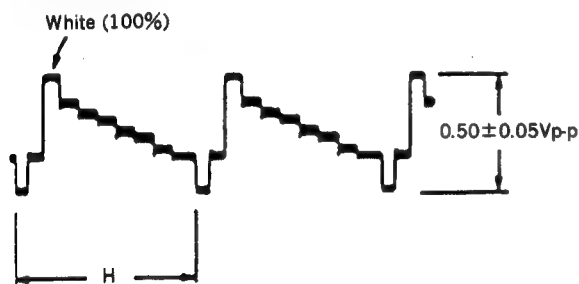


Fig. 11-28.

11-5-18. Quasi, DL Burst Adjustment (VI-129 Board) (Use a Vectorscope)

[Adjustment Object]

Set the level and phase of the JOG circuit so that there will be no variation of color in the JOG mode. If there is any variation of color, the hue will change, during JOGging

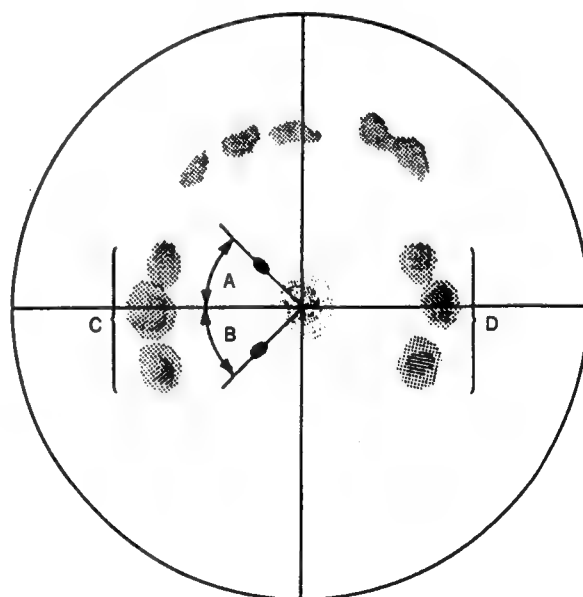
Mode	Playback+Pause
Signal	Alignment tape for operation check (WR5-5CSP), Color bar portion
Measurement point	VIDEO OUT terminal
Measuring instrument	Vectorscope
Adjustment element	RV303 (QUASI BURST) RV301 (DL BURST)
Specified value	See Fig.10-20.

[Connection]

- 1) Input 4.43MHz signal from IC802 Pin⑫ to 1CH of an oscilloscope.
- 2) Connect 1CH output of an oscilloscope to the EXT. subcarrier reference input of a vectorscope.
- 3) Put on the EXT. subcarrier switch of a vectorscope.

[Adjustment Method]

- 1) Adjust with RV303 so as to equalize A and B as shown in Fig. 11-29.
- 2) Adjust with RV301 so as to minimize the shaking of each three brighting point of C and D.



RV303: A=B
RV301: make C and a contrast

Fig. 11-29.

11-6. AUDIO SYSTEM ADJUSTMENTS

Color bar signal should be used as Video signal input for performing this adjustment.

[Connection of Equipment for Audio Measurement]

In addition to equipment for video measurement, the audio measurement equipment should be connected as illustrated below.

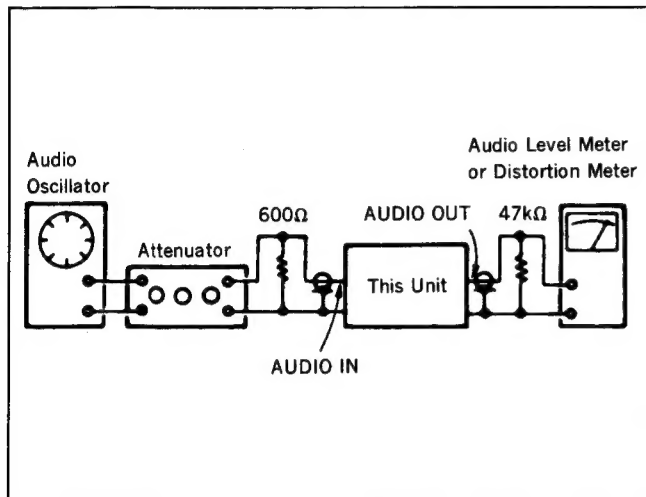


Fig. 11-30.

The adjustments should be performed in the following sequence.

[Adjustment sequence]

1. Carrier Frequency 1.5MHz Check
2. Carrier Frequency 1.7MHz Check
3. 1.5MHz Deviation Adjustment
4. 1.7MHz Deviation Adjustment
5. Playback Separation 2 Check
6. Playback Separation 1 Check
7. E-E Output Level Check
8. Overall Frequency Characteristic Check
9. Overall Distortion Factor Check
10. Overall Noise Check

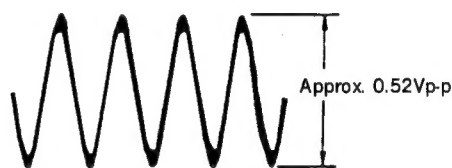
11-6-1. Carrier Frequency 1.5MHz Check (AU-156 Board)

Mode	Record
Signal	No signal
Measurement point	IC901 pin ③ (VCO OUT)
Measuring instrument	Frequency counter
Specified value	$1500 \pm 3\text{kHz}$

Note 1 : A frequency counter should be connected through a buffer amplifier (oscilloscope, etc.) having a high impedance and a low capacitance.

[Check Method]

- 1) Check to adjust to $1500 \pm 3\text{kHz}$.



$1500 \pm 3\text{kHz}$

Fig. 11-31.

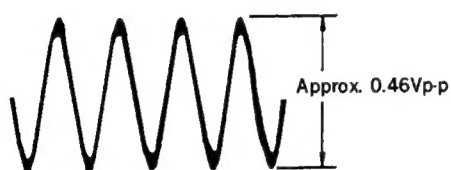
11-6-2. Carrier Frequency 1.7MHz Check (AU-156 Board)

Mode	Record
Signal	No signal
Measurement point	IC901 pin ⑤ (VCO OUT)
Measuring instrument	Frequency counter
Specified value	$1700 \pm 3\text{kHz}$

Note 1: A frequency counter should be connected through a buffer amplifier (oscilloscope, etc.) having a high impedance and a low capacitance.

[Check Method]

- 1) Check to adjust to $1700 \pm 3\text{kHz}$.



$1700 \pm 3\text{kHz}$

Fig. 11-32.

11-6-3. 1.5MHz Deviation Adjustment (AU-156 Board)

[Adjustment Object]

Adjusts the deviation. If deviated, this causes distortion of audio OUT waveform (with stereo signal).

Mode	Playback
Signal	Alignment tape: For operation check, bilingual portion (WR5-9CS)
Measurement point	Audio Line Output terminal, left
Measuring instrument	Audio level meter
Adjustment element	RV901
Specified value	$-7.5 \pm 0.5\text{dB}$

[Adjustment Method]

- 1) Use RV901 to adjust to $-7.5 \pm 0.5\text{dB}$.

11-6-4. 1.7MHz Deviation Adjustment (AU-156 Board)

[Adjustment Object]

Adjusts the deviation. If improper, this causes deteriorated separation with Alignment tape.

Mode	Playback
Signal	Alignment tape: For operation check, bilingual portion (WR5-9CS)
Measurement point	Audio Line Output terminal, right
Measuring instrument	Audio level meter
Adjustment element	RV902
Specified value	$-7.5 \pm 0.5\text{dB}$

[Adjustment Method]

- 1) Use RV902 to adjust to $-7.5 \pm 0.5\text{dB}$.

11-6-5. Playback Separation 2 Check (AU-156 Board)

Mode	Playback
Signal	Alignment tape: For operation check, stereo portion (WR5-9CS)
Measurement point	Audio Line Output terminal, right
Measuring instrument	Oscilloscope
Specified value	400Hz component minimum (no distortion should be present on 1kHz waveform.)

[Check Method]

- 1) Check that 400Hz component on the right level is at minimum.

11-6-6. Playback Separation 1 Check (AU-156 Board)

Mode	Playback
Signal	Alignment tape: For operation check, stereo portion (WR5-9CS)
Measurement point	Audio Line Output terminal, left
Measuring instrument	Oscilloscope
Specified value	1kHz component minimum (no distortion should be present on 400Hz waveform.)

[Check Method]

- 1) Check that 1kHz component on the left level is at minimum.

11-6-7. E-E Output Level Check

Mode	E-E
Signal	400Hz, -7.5dBs
Measurement point	Audio Line Output terminals, left and right
Measuring instrument	Audio level meter
Specified value	$-7.5 \pm 3\text{dBs}$

[Check Method]

- 1) Check that the respective levels of Audio Line Output terminals, left and right are $-7.5 \pm 3\text{dBs}$.

11-6-8. Overall Frequency Characteristic Check

Mode	Self-record playback
Signal	Ⓐ 400Hz, -7.5dBs Ⓑ 20Hz, -7.5dBs Ⓒ 14kHz, -7.5dBs : Audio Line Input terminals, left and right
Measurement point	Audio Line Output terminals, left and right
Measuring instrument	Audio level meter
Specified value	The playback output levels of 20Hz and 14kHz should be $0 \pm 3\text{dBs}$ with 400Hz playback output level at 0dBs .

[Check Method]

- 1) Record signals Ⓐ to Ⓒ in turn.
- 2) Play back the recorded portion.
- 3) Check that the respective playback output levels of 20Hz and 14kHz are $0 \pm 3\text{dBs}$ with 400Hz playback output level at 0dBs .

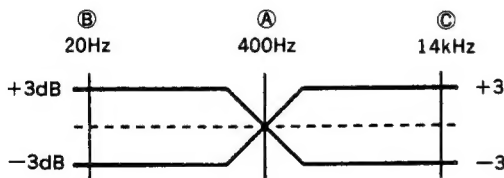


Fig. 11-33.

11-6-9. Overall Distortion Factor Check

Mode	Self-record playback
Signal	400Hz, -7.5dBs : Audio Line Input terminals, left and right
Measurement point	Audio Line Output terminals, left and right
Measuring instrument	Distortion meter
Specified value	1.5% or less Note)

[Check Method]

- 1) Record signal.
- 2) Play back the recorded portion.
- 3) Check that the distortion factor is 1.5% or less, left and right side. Note)

Note : These are values when a 200Hz - 6kHz BPF is used.

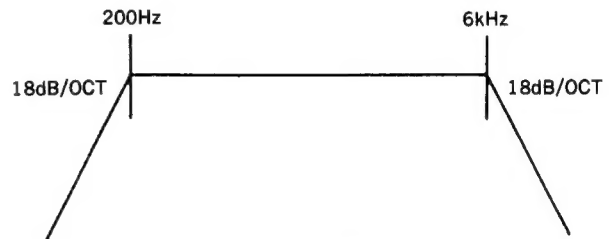


Fig. 11-34.

11-6-10. Overall Noise Level Check

Mode	Self-record playback
Signal	No signal (Insert a shorting plug into the Audio Line Input jacks, left and right.)
Measurement point	Audio Line Output terminals, left and right
Measuring instrument	Audio level meter
Specified value	-63dBs or less Note)

[Check Method]

- 1) Record.
- 2) Play back recorded portion.
- 3) Check that the noise level is -63dBs or less, left and right side. Note)

Note : These are values when an IHF-A weighing filter is used.

VI-129 BOARD (COMPONENT SIDE)

